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Vol. XXXVIII

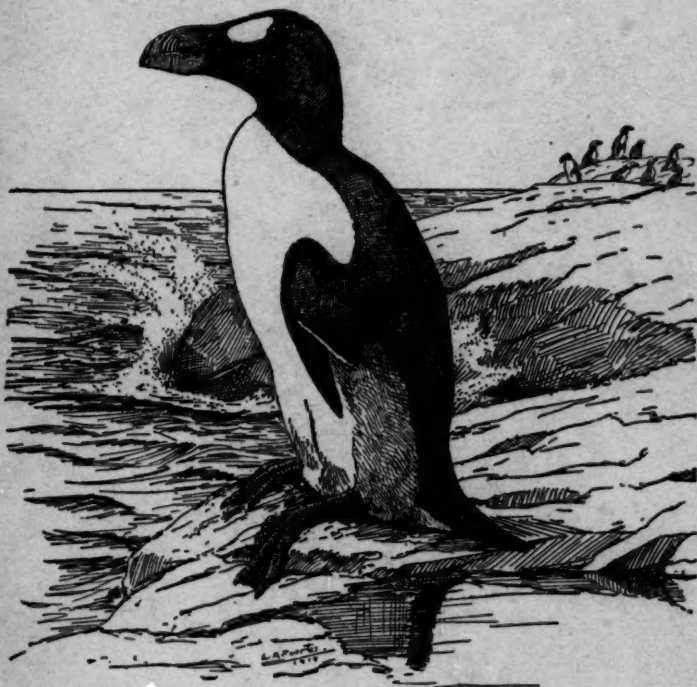
# The Auk

A Quarterly Journal of Ornithology

Vol. XXXVIII

JULY, 1921

No. 3



PUBLISHED BY

**The American Ornithologists' Union**

LANCASTER, PA.

ISSUED SEPTEMBER 1921

Entered as second-class mail matter in the Post Office at Lancaster, Pa.

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# THE AUK:

## A QUARTERLY JOURNAL OF

### ORNITHOLOGY.

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#### WHICH SEX SELECTS THE NESTING LOCALITY.<sup>1</sup>

BY H. MOUSLEY.

A ROUGH draft of this paper was prepared in July 1918, about the same time as that of 'The Singing Tree,'<sup>2</sup> but was not offered for publication with the latter, as I was anxious to further consider the matter, and if possible gain some additional evidence in support of my theory, that it is the male in most cases who really selects or establishes the general nesting site, whilst the female no doubt, in the majority of cases, is responsible for selecting the exact spot or location of the nest on that site. Now this at first sight may seem contrary to all pre-conceived ideas on the subject, for I believe we have all come, in a hazy kind of way, to look upon the female as the principal actor in this site selecting business, whereas I would suggest that it is really the male who stands out as the dominant figure. Now in order to make my point clearer, I will ask you to consider for a moment what is meant by "the singing tree." Is it merely a figure of speech, or a fancy title to a paper,

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<sup>1</sup> Read before the Nuttall Ornithological Club, March 7, 1921, by Dr. Chas. W. Townsend for the Author. The present paper was received for publication before the appearance of Mr. Howard's 'Territory in Bird Life' which was reviewed in the April 'Auk' and it is interesting to see how Mr. Mousley has independently evolved the same theory that is so fully set forth in that volume. As Mr. Mousley explains he had reached his conclusions at the time his paper on 'The Singing Tree' was written three years ago,—a paper which, as we have already mentioned seems to have escaped Mr. Howard's notice—ED.

<sup>2</sup> 'Auk,' Vol. XXXVI, 1919, pp. 339-348.

or does it stand for something deeper, a something that may mean the home or trysting place of the male, the spot at which the female first finds or hears him, and to which she can at any time return, for in the bird world I think it is the female that finds (not necessarily seeks) the male, and not the male who seeks the female? In support of this, why is it that at migration time so many males of different species (far more than is generally supposed) come in advance of the females, some a few days, others again even a few weeks. I would suggest they come for the purpose of selecting some area of ground over which they can hold sway, in other words they nominally select the general nesting site, to which the females may come either accidentally, or as is most probably the case (especially with the warblers), by hearing the males singing from their favourite trees or other posts, which also act as look-out stations, from which they can sally forth and drive all other interlopers away. Taking the case of the Red-winged Blackbirds (*Agelaius phoeniceus phoeniceus*) and Bobolinks (*Dolichonyx oryzivorus*) which nest near my house, the males in both cases arrive many days in advance of the females, thirty-two in the case of the former, and seven in that of the latter, these being averages for the past six years. Immediately on arrival the males take up their stations, the first named on the marsh, (where they are usually found early in the morning and late in the afternoon, the rest of the day being spent in the adjacent stubble fields) and the latter on certain meadows just in front of my house, and there later on, as well as on the marsh in the case of the Red-winged Blackbirds, will the nests be surely found, thus clearly indicating, I think, that the males in both these instances really selected or established the general nesting site. In further support of this matter it may be remembered that in the spring of 1912 as already recorded<sup>1</sup>, Red-winged Blackbirds were unusually numerous, the males on arrival frequenting several new localities, where later on, when the females appeared, nests were duly constructed. Since then the males have never frequented those localities nor have any nests been found, which again is suggestive, I think, of the influence they have exerted in the matter.

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<sup>1</sup> 'Auk,' Vol. XXXIII, 1916, p. 168.

Before proceeding further, however, I should like to mention an interesting case which came under my notice during the summer of 1919, and which seems to bear out my contention that the male does not seek the female, but really waits for her to pass over his chosen area. Now the selected area in this case happened to be the orchard at the side of my house which a Least Flycatcher (*Empidonax minimus*) had laid claim to. There for several days I heard his oft repeated "che-béc, che-béc," but when a week or more had elapsed and still there were no signs of a female I became interested, and took especial pains to watch his movements more closely. Just about this time a male Warbling Vireo (*Vireosylva gilva gilva*) also took up a station principally in a large maple tree in front of my house, and two days later was joined by a female. Then came a Baltimore Oriole (*Icterus galbula*) and selected (more especially) another maple tree on the other side of the road, also in front of my house, and in the course of four days (females here for the past six years have arrived as an average seven days after the males) he likewise was joined by a mate. Now here were three male birds, all in possession of "singing trees" and a certain area of ground, from which all other birds were promptly driven, whenever by any chance they encroached thereon. Two of these birds as we have already seen had not long to wait for mates, but the poor little Least Flycatcher although he persistently kept up his "che-béc" notes all through the summer, never became mated, surely a somewhat striking instance that male birds do not forsake their chosen ground, but await the arrival of a female. Was it otherwise, surely this Least Flycatcher could have found a mate by wandering about promiscuously, in which case having found one, they would be able to keep together until such time as nesting operations commenced, or in case of accidentally losing one another, it would be possible for them to come together again, a somewhat easy thing to do when there is a known station to repair to such as a "singing tree," or in the case of the Ruffed Grouse a "drumming log." This may partly account for the fact that when birds are robbed of their first, second, or even third set of eggs, they invariably build another nest in close proximity to the old one, as pointed out in my paper "A Study of Subsequent Nestings."<sup>1</sup> They would do so because the ground had become

<sup>1</sup> 'Auk,' Vol. XXXIV, 1917, pp. 381-393.

familiar to them, and they could always make sure of meeting one another again, which might not be the case if they wandered off to an entirely new locality in search of a fresh nesting site. However, in any case it shows their strong attachment to the chosen area, to which they often return year after year as already recorded. Now as is well known the males of the Ruffed Grouse are polygamous, and in this part of the country there are not a great many to the square mile. How then are the females to find them at the psychological moment without having to wander over a large tract of country? Why, surely, by means of the "drumming log," to which the males repair at certain times of the day, giving notice thereof by the rapid beating of their wings, which can be heard a great way off, and which guides the females to the desired spot. Once having located this, they always know where the male is to be found, and in like manner, surely, the female warbler, let us say, having once located a male at his favourite "singing tree," can always find him there again should she so desire, or they become separated accidentally. I am of course referring here to the initial stages of courtship (which, however, often last for a considerable time), for directly the nest is commenced that of course would take the place of a "singing tree." Reverting to the Warbling Vireo and the Baltimore Oriole, I may say that in both these cases the nests were eventually built in the principal "singing tree" of the male, another indication that this sex again was the chief factor in determining the general nesting site. Of the dozens of warblers' nests that I have found within a very short distance of the "singing tree" or trees of the male, it is unnecessary to go into details, for all I think clearly show, that in this family if in no other, the males are the ones that without doubt are instrumental in determining the general site of the nest. Likewise in other families, I could quote innumerable instances which all seem to confirm the view I have taken up regarding the part exercised by the male in the selection of the general nesting site. Now let us try to examine what the part exercised by the female may be. In the first place, I think it may be rightly assumed, that in the large majority of cases it is the female who generally does most, if not all of the construction work, in which case it seems reasonable enough to suppose that, being the most adept builder, she should



naturally be the most likely one to know the exact requirements her particular nest demanded. The subject, however, is not an easy one to handle by any means, for in many cases the male is an active worker, and may know equally well those particular requirements. Now most of us I imagine have watched a pair of Bluebirds (*Sialia sialis sialis*) at nesting time, inspecting all the likely looking holes in a number of orchard or other trees. First one bird goes in and inspects a hole, then the other proceeds to do the same thing, and on coming out it often appears as though a weighing up of the pros and cons were taking place, but unless one is able to follow them about until the final hole is decided upon, it seems almost impossible to form any adequate idea which sex eventually decides the matter. However, I was fortunate enough on two occasions to be able to follow a pair of Chickadees (*Penthestes atricapillus atricapillus*) about, until the final hole was selected. In both instances this was decided upon very rapidly, first one bird inspected the hole, and then the other (as they had done previously in the case of several others), after which they both retired to a nearby tree, where some form of understanding not apparent to our senses, was evidently arrived at, for with scarcely a moment's delay, first one bird, and then the other, again entered the hole, and commenced to remove the dead and decaying chips, and in due course the nest in each case was constructed. In these two instances it would appear as though the final selection was entirely a mutual one, which might have been expected, seeing that both sexes take part in the construction of the nest, the same as the Bluebirds. Now in the case of a large majority of the warblers this is not so, or at least, it has not been apparent in those which have come under my observation, for the males rarely seem to take any very active part or interest, either in the construction or exact location of the nest. This was particularly apparent in the case of the Blackburnian Warbler (*Dendroica fusca*) mentioned in my "Singing Tree" paper,<sup>1</sup> for I am disposed to think, (in view of the very faint indications there were of a nest) that the date June 10, 1918, was the very one on which the exact spot for the nest was finally decided upon. If this was so, I am in a position to state

<sup>1</sup> 'Auk,' Vol. XXXVI, 1919, p. 346.

that the male could have had very little say in the matter, (although of course he settled the general site by his "singing tree" before the arrival of the female) for he was engaged off and on nearly all day in singing from his favourite tree, and I never once saw him attempt to bring any building material to the nest, whereas I repeatedly saw the female do so, as already described. Many other similar instances could be mentioned, more especially that of the Nashville Warbler (*Vermivora rubricapilla rubricapilla*) recorded in 1917<sup>1</sup>, where the male bird I also feel sure had very little if anything to do in selecting the final spot for the nest, although of course he again fixed the general site by his "singing tree," which in this case was only eight yards away from the nest, that of the Blackburnian's being eighteen yards. He like the Blackburnian spent most of his time in singing, but on several occasions he apparently accompanied the female whilst she was gathering building material, for I saw them return together, but he always repaired at once to his tree and commenced to sing. I think judging from my own experience, and that of others, it may safely be assumed that the males of this most interesting family, in the majority of cases, have little if anything to do with the actual selection of the final spot on which the nest shall rest, the females in nearly all cases performing this duty as well as that of constructing the nest. Let us now take another interesting but somewhat different case, in which the female although contrary to one's expectations (as the males of this species assist in the construction of the nest also) still apparently had all the choosing of the final spot for the nest. I refer to the case of the Purple Finch, (*Carpodacus purpureus purpureus*) whose nest was built in a spruce tree in an orchard adjoining the house I was temporarily residing in during the summer of 1918. I first noticed the male usually singing from a particular crab-apple tree, and shortly afterwards he was joined by a mate, when building operations commenced. Strange to say, however, the nest was built on the side of the spruce tree away from that of the apple tree, and where it was invisible to the male whilst singing, nor was it possible for him to take up any other position (except on the spruce itself, and this is what he eventually did on several occasions) and be

<sup>1</sup> 'Auk,' Vol. XXXV, 1918, p. 302.

able to see it, for beyond the spruce was an open space with no other trees in the immediate neighbourhood. In this case I think we may fairly assume the male had very little say in the matter, otherwise he would surely have selected the side of the spruce opposite his favourite apple tree, where he could see the nest and his mate whilst singing. However, this is one of those puzzling little problems of which the solution I suppose will never be forthcoming, but what we can reasonably be sure of, I think, is that the male in selecting that particular apple tree did really fix the general site of the nest, although apparently he had no controlling influence with regard to the exact spot in which it was eventually to rest.

Let us now look at a different case altogether, where the male I think neither fixes the approximate, nor yet the exact location of the nest. I refer to the Ruffed Grouse whose case we have already partly considered. Here I think we are treading on much firmer ground, and can almost assert that the male has nothing whatever to do with the construction of the nest, or even the selection of its general site, which latter I believe is usually far removed from his "drumming log," and is probably unknown to him. There the female hatches out her eggs, and afterwards attends and protects the young without any assistance from the male whatsoever. As regards the Red-winged Blackbirds and Bobolinks, I can only state that so far as my experience goes I have never seen the males of either species engaged in any nest building, nor have I been able to detect any behaviour on their part, which might be construed as assisting the females in selecting a suitable spot for the nest. This being so, I have come to the conclusion that the females of both species, being the constructors of the nests, are likewise the selectors of the exact spots for them to rest in, although these be it remembered have always been on the ground which the male birds had selected to congregate and sing upon long before the arrival of the females.

Of the sea birds I cannot speak with any great degree of confidence, for my opportunities of observing them in their breeding homes have been very limited, but from what I have gathered when visiting the great cliffs at Bempton near Flamborough Head on the east coast of England, I have come to the conclusion that probably much the same conditions exist as with the land birds.

There, however, the male Guillemots (*Uria troille troille*) have to be content with laying claim to a very small area on one of the ledges of rock, (owing to the countless thousands that breed in close proximity) which area becomes the general nesting site, and on which perforce the female is compelled to deposit her egg, without much latitude for selecting an exact spot.

In conclusion, it seems to me that the remarks at the end of my paper 'A Study of Subsequent Nestings' (already referred to) are also very appropriate here, i. e. the more we study these interesting bird problems the more is it brought home to us how very little we really know concerning them, and at best our solutions in most cases can only be approximate ones after all. However, in the present case I think I have some good grounds for believing that the "singing tree" does serve some other purpose than that of a mere fancy title to a paper. It is surely the home of the male bird, where he awaits the coming of his bride, the place from which he loves to sing, and so in time it becomes the loadstone which eventually guides her to him. It also acts as a lookout post, from which he can perceive any encroachment on his domain and at once resent it by immediately attacking the intruder, which is plain to be seen almost any day during the breeding season. But it accomplishes one other thing also, I think, for it surely demonstrates that of the two sexes the male in the majority of cases really selects or establishes (call it which you like) the general nesting site, which is the main purport of this paper.

*Hatley, Stanstead Co., Que.*



## IMPRESSIONS OF BIRD-LIFE IN FRANCE.

BY E. L. POOLE.

### *Plate XIV.*

LIKE most American students of bird-life I had long cherished a desire to form the acquaintance of some of the old-world birds that are so frequently mentioned in literature. The experiences of John Burroughs and Frank M. Chapman during their trips abroad only increased my curiosity to really see and hear some of these famous songsters and to compare them with our own favorites.

It was in the summer of 1918, while serving with the American Expeditionary Forces, in France, that I finally had an opportunity to gratify my ambitions in this direction.

The trip across was made at a time when submarines were the primary objects of interest, but this proved to my advantage, ornithologically, for it caused us to go far out of the usual course, and pass around the northern coast of Ireland, near the large breeding colonies of sea birds which lie off these coasts.

During the first day out of New York, July 30, we were attended by numbers of Wilson's Petrels (*Oceanites oceanicus*) which were not seen after that evening, and not another bird was noted until three days later when we passed a school of whales which were attended by numbers of Greater Shearwaters (*Puffinus gravis*), Wilson's Petrels, (*Oceanites oceanicus*) and at least one Fulmar (*Fulmarus glacialis*).

On the seventh we saw more Shearwaters, another Fulmar and a Cormorant (*Phalacrocorax carbo*).

Finally, on the ninth we were warned of our approach to land by the appearance of a flock of the Common European Gulls, (*Larus canus*). Upon the following morning we found ourselves in sight of the coasts of Ireland and Scotland, while the water all about us was literally alive with numbers of Razorbills, (*Alca torda*), Murres, (*Uria troille troille*) Puffins (*Fratercula arctica arctica*), Arctic Terns (*Sterna paradisæa*) and Gulls of several species.

The harbor of Liverpool was filled with a living snow-squall of Gulls, including the Herring Gull, (*Larus argentatus*) three or four

Great Black-backed Gulls (*Larus marinus*) and numbers of the Black-headed Gulls, (*Larus ridibundus*).

The return trip in July 1919, revealed no new species except the Storm Petrel (*Thalassodroma pelagica*) which we met on the 20th, one day out from St. Nazaire, and saw for two days following. From then until the 29th no birds were seen. On that day we again met the Wilson's Petrels, and the following day docked at Hoboken.

Most of the following observations were made in the vicinity of Is-sur-Tille, Cote d'Or, in the foothills of the Vosges Mountains, and at Montoir, a small village some seven kilometers east of St. Nazaire, on the river Loire.

The country about Is-sur-Tille is rolling, and checkered with patches of pine, which is seldom allowed to reach any considerable size. The hardwoods along the Tille consist largely of planes, poplars, and willows, the latter invariably being lopped off at a height of eight feet or so.

Fences are very rare in this country, their place being taken by thorn hedges, with an occasional stone wall or ditch.

The Tille is simply a large meadow-brook which meanders through broad meadows and patches of thorns and alders, with now and then a strip of reeds of varying depth.

The Montoir district is bordered on two sides by tidal meadows, which are almost entirely inundated during the rainy season, from October until March, altho the Americans succeeded in reclaiming certain areas by drainage. The remainder of the camp faced an extensive peat bog which is covered by at least three feet of water during the winter, but dries up completely in April, the drainage being accomplished by means of a large canal.

The surrounding country is cut up into small farms, fenced everywhere by ditches and hedges of thorn, pollard willows and oaks.

With the exception of the main military roads the surrounding country is traversed by the most picturesque lanes, that are often lined by a dense prickly bush which is covered with handsome yellow flowers throughout the winter.

While the number of species observed was less, comparatively, than would be seen in a like period in our Eastern States, the num-

ber of individuals was about the same. These conditions are probably due to the country having been longer under cultivation, and the consequent extinction of those species which were unable to adapt themselves to the changes in environment.

The following extract from my note-book gives a fair idea of the character of the bird-life about Montoir during the breeding season. "June 8. Montoir. Out lane around the peninsula near camp. Summer well advanced. Marsh completely dried, except for a few ditches. Roses, honeysuckle, buttercups. Thistles just opening.

Swifts and Swallows flying over the meadows and about barnyards. Three or four Stonechats are perched on the highest bushes along the hedgerow, now and then darting to the ground to feed. They have a nest in a dense clump of thorns nearby.

One or two Whitethroats are singing in the hedges. A couple of Pies fly over and alight in a poplar, only to continue their flight as we approach. A Blackbird flies up the row ahead of us, and a Hedge Sparrow darts down among the reeds in a partly dried up ditch along the road.

At intervals a Chaffinch sings its plain but welcome song from the roadside trees, and one of the Red-backed Shrikes makes a short detour out over the meadow only to return and take up its point of vantage in the hedge.

A small group of Goldfinches are feeding among the opening thistles a short distance out in the field, and two or three Carrion Crows and a Green Woodpecker wing over the meadow, the latter looking, from a distance, exactly like our Flicker.

As we turn to go, a pair of Greenfinches fly out of the Hawthorns and cross over to some trees on the other side of the road, while a Yellow Bunting sings its monotonous ditty from somewhere in the thick foliage of the hedge.

But beyond all, from the meadows and air in every direction comes the incessant jargon of the Skylarks, forming a background of sound to the whole scene."

The following notes cover all the species which I was able to identify with certainty, all the more doubtful records having been omitted.

The disadvantage of being unable to find a satisfactory work on

French bird-life was met by making a series of field-sketches of the birds as I observed them. These were, for the most part, identified without difficulty upon my return.

These notes cover the period between September 22, 1918 and July 5, 1919.

**Larus melanocephalus.** MEDITERRANEAN BLACK-HEADED GULL.—Common on the Rhone at Lyons. February 14 and 15.

**Larus marinus.** GREAT BLACK-BACKED GULL.—Three seen over the Montoir marshes during a storm on April 26, 1919.

**Larus argentatus.** HERRING GULL. A flock of 20 flew over the Montoir marshes, January 18. Abundant on the Loire at Savenay, February 10; five seen at Montoir. April 13. and six on April 17; also common at Lyons. February 14 and 15.

**Anas platyrhynchos.** MALLARD. A common migrant or possibly summer resident on the Montoir peat bog. April 19 to June 14. On one occasion a pair of these ducks alighted in a dry pasture near some cattle; the first time that I have ever seen wild ducks do this.

**Gallinula chloropus chloropus.** MOOR HEN.—One was captured alive in the British rest camp at Le Havre. August 13. Another seen on the River Tille, where it was flushed from dense reeds bordering the stream, September 22.

**Ardea cinerea.** COMMON HERON.—One seen on February 25 at Montoir. This was my only record. Seen in flight it resembles a small Great Blue Heron,

**Actitis hypoleucos.** COMMON SANDPIPER.—Apparently a scarce migrant. Three or four seen along the canal that drains the Montoir bog on April 26 constitute my only record of this species.

**Vanellus vanellus.** LAPWING.—Tolerably common transient. On February 2 I saw two flocks of from 25 to 30 individuals each. On that day I met a Frenchman who had shot and wounded one, which he permitted me to sketch. While on the ground their actions suggest the Killdeer, but they seem more sluggish and were altogether silent. The flight is heavy and the wing beats regular, suggesting that of our Green Heron.

The flocks fly in close formation, wheeling over the meadows almost as one; now showing the white breasts, or again wheeling so that only the black backs are visible, presenting a most attractive picture.

Several were also seen on February 10 near Savenay, and two over the Montoir marsh, May 4.

**Perdix perdix.** PARTRIDGE.—Common both at Is-sur-Tille and about Montoir. These are somewhat similar in habits to our Bobwhite, but are larger. On several occasions I heard them utter a peculiar harsh call when flushed.



**Streptopelia turtur turtur.** TURTLE DOVE.—Summer resident. Not seen until May 11, but common thereafter. Certain dead trees in the Montoir bog were often literally covered with them at times, although they seem to be much sought after by the native pot-hunters. Their mournful cooing could be heard at all hours of the day, echoing through the countryside and reminding one very often of our Mourning Dove at home.

**Columba palumbus palumbus.** WOOD PIGEON.—Common about some of the squares and parks in Paris, May 17 and 18. The conspicuous white wing-patches easily distinguished them from the domestic pigeons with which they did not associate.

**Milvus milvus.** KITE.—February 2 I saw two soaring on motionless wings over the flooded Montoir meadows. The feet appeared decidedly reddish.

**Circus aeruginosus.** MARSH HARRIER.—Apparently a tolerably common summer resident. It hunts in much the same way as our Marsh Hawk, but appears larger and heavier. Individuals were seen over the Montoir marshes May 11 and June 14 and 15.

**Circus cyaneus.** HEN HARRIER. Common summer resident. Arrived, April 26. Some individuals appear fully as light as Herring Gulls. This species is indistinguishable in the field from our Marsh Hawk.

**Accipiter nisus.** SPARROW HAWK. A rather common permanent resident. Resembles the Sharp-shin very closely. Its usual method of hunting in this country is to skim over the fields at a low elevation, rising just enough to clear the hedges; thereby enabling it to surprise any birds that may be feeding away from cover.

**Buteo buteo buteo.** BUZZARD.—Apparently a tolerably common resident at Montoir. More common in winter. It takes the place of our Red-tail, and has a similar call.

**Falco tinnunculus tinnunculus.** KESTREL.—Common resident. Resembles our Sparrow Hawk very closely. It is apparently feared by the Skylarks, which it appears to hunt regularly in winter. The call is similar to that of *F. spavarius*, too, but is best described in one syllable. "klee, klee", etc.

EAGLE.—On January 17 an eagle, of unknown species, flew over the Montoir meadow.

**Pandion haliaetus haliaetus.** OSPREY.—One seen April 27, flying over the flooded bog at Montoir.

**Tyto alba alba.** BARN OWL.—The carcass of a Barn Owl was seen hanging from a pole in a grain-field on April 19, and hung in the same position for several weeks. It was decidedly smaller than our variety.

**Strix aluco.** BROWN OWL.—One seen, December 25 and 26. Surprised while hiding in a vine covered tree, from whence it flew to another a short distance off, bringing to the scene scores of Tits, Chaffinches, a couple of Jays and a Green Woodpecker, which created a great commotion for some time.

***Athene noctua noctua*.** LITTLE OWL.—December 25 and April 28, I found this to be the source of a peculiar kitten-like cry that I had heard once or twice at dusk near Montoir. Apparently nesting in a lopped-off oak. It looks much like an Acadian Owl.

***Cuculus canorus canorus*.** CUCKOO.—Abundant summer resident. arriving April 20. Its call is just like the regulation cuckoo clock, with much the same quality as the Mourning Dove—a far-reaching call. This Cuckoo is not as shy and retiring as ours, but seems very restless and flies from place to place with a hawk-like flight, carrying the head in a strained position.

***Alcedo atthis ispida*.** EUROPEAN KINGFISHER. A pair were seen along the Tille (Cote d'Or) on two occasions, September 22 and 29. They are certainly among the handsomest birds here, fairly glittering as they fly past, uttering their weak rattle or scream.

***Picus viridis virescens*.** GREEN WOODPECKER.—A common resident wherever the trees have been allowed to grow to their normal size. It resembles our Flicker in many ways. Feeds much on the ground, and has a loud rolling call suggesting somewhat the whinnying of a colt. To all intents and purposes it is simply a Flicker dipped in yellowish green dye.

***Dryobates minor (hortorum ?)*** LESSER SPOTTED WOODPECKER.—One seen December 25, at Montoir. It seems to take the place of our Downy.

***Dendrocopos major pinetorum*.** GREATER SPOTTED WOODPECKER.—June 16 and July 4. my only Montoir dates for this species. Also seen twice December 1 and 8, at Is-sur-Tille. It seems to represent our Hairy Woodpecker in this fauna.

***Jynx torquilla torquilla*.** WRYNECK.—One seen on a towpath along Montoir canal, June 12. Feeding on ants, apparently. When disturbed it perched on an upright stick and craned and twisted its neck in the grotesque manner peculiar to this species.

***Caprimulgus europaeus europaeus*.** NIGHTJAR. Started one up April 20, from an unfrequented road.

***Apus apus apus*.** SWIFT. Abundant summer resident. Larger than ours, with a slightly forked tail, and slower in its movements. Its only note is a harsh wheezy scream.

***Alauda arvensis arvensis*.** SKYLARK. An abundant resident at Montoir, being heard at all hours of the day. They commence to sing in February and are seldom silent after that. The usual call note is a loud "dear, dear, dee'ar" suggesting the call of our Killdeer, but it sometimes utters a low "churring" note when flushed. The song is a loud, mad outburst, rivalling that of our Bobolink, but louder and more piercing, suggesting certain notes of the Meadowlark in quality. The Skylark is one of the most aggressively energetic birds here and usually carries its crest erect whenever suspicious or excited. It is very pugnacious, and during the mating season the males were constantly fighting or attempting to outsing one another.

**Lullula arborea.** WOOD LARK.—A common winter resident, frequenting drier localities than the former species. It is less active and noisy than the other, and more shy. I have no record of it after February 2.

**Garrulus glandarius glandarius.** JAY.—Apparently a common resident at Montoir. Much larger and heavier than our Blue Jay. The conspicuous white rump and wing patches are excellent identification marks. The flight resembles that of our Belted Kingfisher and the only note is a harsh croak.

**Pica pica pica.** MAGPIE.—Abundant everywhere in France. One of the most characteristic and conspicuous birds. It has a varied vocabulary, ranging from a harsh parrot-like screech to various low chuckling notes. On one occasion I observed a trio of Kestrels and a small flock of Pies engaged in a game which seemed to afford both parties great amusement. The Kestrels would hang over the bushes in which the Pies were concealed and dart down on one whenever it exposed itself. Thereupon the whole assemblage of Pies would pursue the Kestrel until it returned to its former elevation. This performance continued for at least half an hour.

**Corvus corone corone.** CARRION CROW.—Common everywhere, but more solitary than the Rook. Easily distinguished from the latter by its harsh croak and much larger size. A pair nested in a large elm in the Montoir bog.

**Corvus frugilegus frugilegus.** ROOK. Abundant resident. It has a weak nasal caw resembling the Fish Crow's. It is gregarious, nesting in colonies wherever suitable woodlands can be found.

**Corvus monedula spermologus.** JACKDAW. Abundant about the Cathedral of Nantes, February 10.

**Corvus cornix cornix.** HOODED CROW. One seen over the marshes at Montoir, March 19. Its call is weak and nasal, somewhat like the Rook's.

**Sturnus vulgaris vulgaris.** STARLING. Resident, but more abundant in winter, when it feeds on the flooded meadows, wandering about in great compact flocks and resorting to tall pines to roost.

**Passer domesticus domesticus.** HOUSE SPARROW. Uniformly abundant, but probably less so than in certain localities here.

**Passer montanus montanus.** WOOD SPARROW. A rather common resident in country districts. One pair nested in the temporary hospital buildings near St Nazaire. Resembles a small highly colored House Sparrow.

**Acanthis cannabina cannabina.** LINNET. Abundant summer resident, nesting among the hedges. First seen April 19. It reminds one somewhat of our Redpoll in appearance and habits, feeding mainly in cultivated fields and gardens. It has a very sweet goldfinch-like song.

**Carduelis carduelis carduelis.** EUROPEAN GOLDFINCH. Common summer resident, resembling our Goldfinch much more in habits than in

appearance. I know of few prettier sights than a group of these Goldfinches feeding among the apple blossoms. Like our species, they are so fond of thistles, and every large patch of thistles was sure to harbor a small flock. Arrived April 13.

**Emberiza cirius.** CIRL BUNTING. A common resident, generally distributed. Nest'ng among the hedgerows. Its song is a droll, wheezy performance.

**Emberiza citrinella citrinella.** YELLOW BUNTING. A common resident; in winter feeding along with the Ciril Buntings, Chaffinches, and Greenfinches, about the grain warehouses in the American railroad yard. In summer they frequent hedges, nesting among the Hawthorns. Their song is a monotonous repetition, "sweet, sweet, sweet, sweet, sweet."

**Emberiza schoeniclus schoeniclus.** REED BUNTING. A common summer resident on the Montoir bog, living among the reeds and coarse sedges, where it dodges in and out among the thick growth which borders the pools. First seen May 4. Also rather common in similar localities along the River Tille in autumn.

**Emberiza calandra calandra.** CORN BUNTING. Common summer resident near Montoir. First seen, April 13. This looks much like a large grayish Song Sparrow. Its song is a very good imitation of our Grasshopper Sparrow's, but is considerably louder, and is often given while in flight, the singer gliding back into the grass with wings, legs and tail dangling, reminding one of the flight performance of the Yellow-breasted Chat.

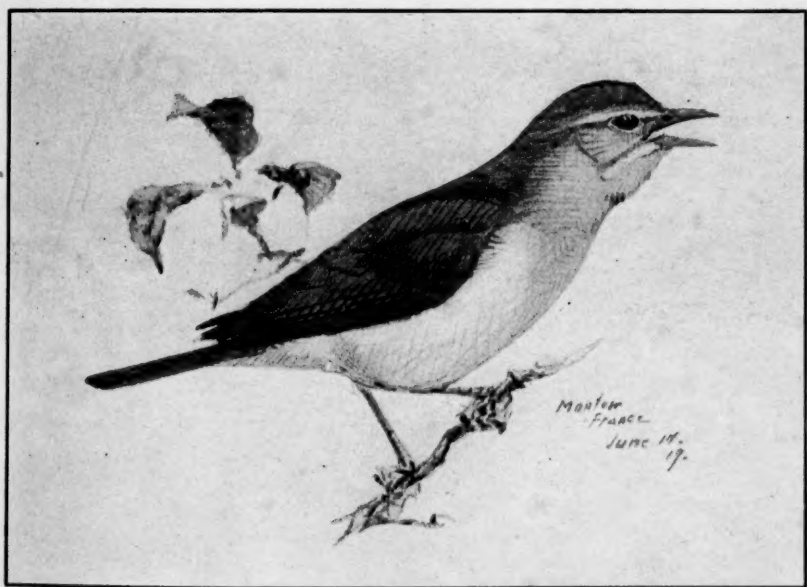
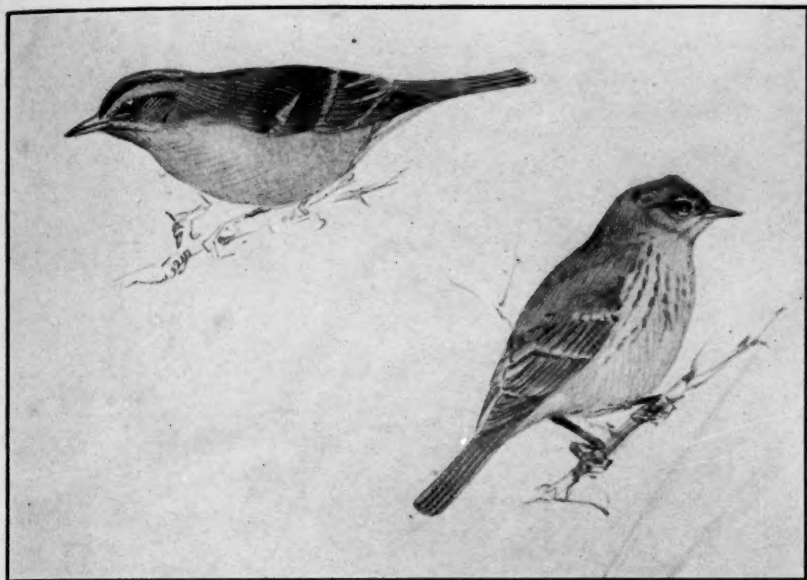
**Chloris chloris (subsp?).** GREENFINCH. A tolerably common resident, associating in the winter with the Yellow and Ciril Buntings and Chaffinches. In summer it frequents the dense hedges.

**Fringilla coelebs coelebs.** CHAFFINCH. An abundant resident about Montoir. Probably the most abundant winter species in and about the villages. In the winter plumage it bears a decided resemblance to our Goldfinch. One of the Chaffinch's call notes is exactly like the call of our Chewink. Its song starts out like that of our House Wren rising in a crescendo, then breaking into an odd jargon resembling the song of the White-eyed Vireo. At one farmhouse the inmates kept a brood of young Chaffinches in a cage, hanging in a hedge. The parents were feeding them.

**Pyrrhula pyrrhula europaea.** BULLFINCH. Seven seen on April 19 at Montoir, feeding on buds in tree-tops. Common during September and October at Is-sur-Tille. In habits it resembles our Goldfinch.

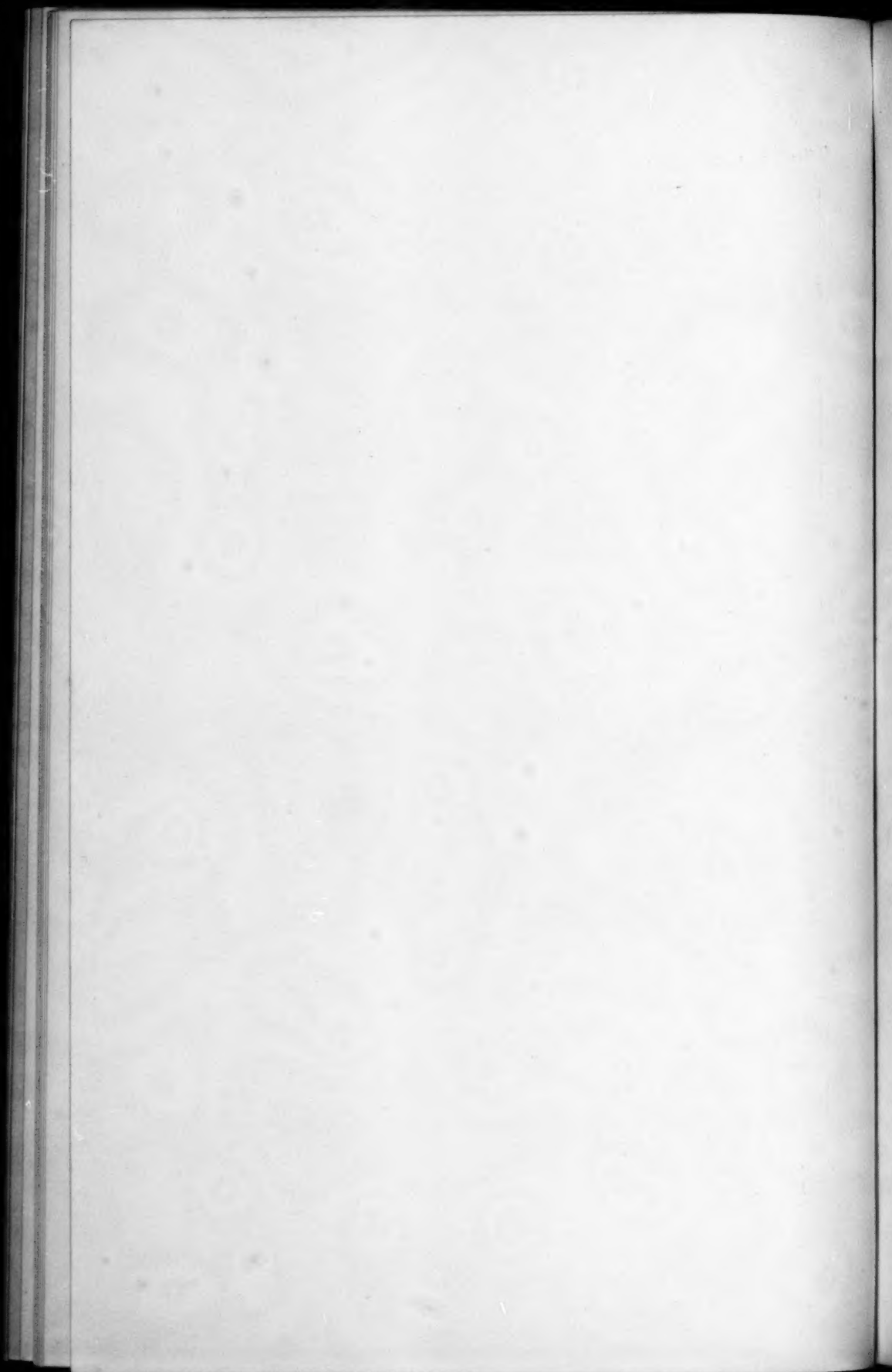
**Delichon urbica urbica.** MARTIN. Abundant in the Province of Cote d'Or until September 22. Apparently scarce in Brittany (only one seen, June 12). In Is-sur-Tille they nested below the eaves of the houses on the main street, building retort-shaped nests like those of our Cliff Swallow. One nest was actually in the corner of a window in the heart of the village.





FIELD SKETCHES FROM LIFE.

Upper: The Aquatic Warbler (Left) and the Spotted Flycatcher (Right).  
Lower: The Garden Warbler.



**Hirundo rustica rustica.** SWALLOW. Summer resident, arriving April 10. This is almost identical with our Barn Swallow, both in appearance and habits, and is equally abundant.

**Riparia riparia riparia.** SAND MARTIN. Abundant summer resident. First seen April 13, after which, for several weeks, the flooded Montoir bog was literally alive with them. They are identical with our Bank Swallow.

**Lanius collurio collurio.** RED-BACKED SHRIKE. This handsome Shrike was quite common in some localities, three or four pairs nesting within a half mile along a thorn hedge skirting the Montoir bog. They appear to feed exclusively on insects, as the other birds display no fear of them. The strikingly marked white and black tail is common to this species, the Wheatear, and the Whinchat. The only note that I ever heard this bird utter is a harsh cry like that of our Northern Shrike. It is usually seen perched on some exposed twig, from which it flies to the ground to pick up its insect prey.

**Lanius senator senator.** WOODCHAT SHRIKE. One seen June 14. at Montoir.

**Muscicapa striata striata.** SPOTTED FLYCATCHER. Common along the Tille (Province of Cote d'Or) during the last week of September. It resembles our Phoebe in feeding habits.

**Muscicapa hypoleuca hypoleuca.** PIED FLYCATCHER. One seen, June 3, in yard of Base Hospital at St. Nazaire. Apparently like our flycatchers in feeding habits.

**Phylloscopus collybita collybita.** CHIFFCHAFF. Common summer resident. First seen March 30. Resembles one of our Vireos in habits and appearance but has a characteristic ringing song—a monotonous repetition of its name.

**Phylloscopus trochilus trochilus.** WILLOW WARBLER. First seen, April 13. This resembles our Warbling Vireo in appearance, but is more active, and sings incessantly while it feeds. It is one of the finest songsters. The song resembles a part of the Indigo Bunting's, but is sweeter and lacks the harsh finch quality.

**Prunella modularis modularis.** HEDGE "SPARROW." A common resident, living in hedges throughout the country. It has a very sprightly and attractive song, suggesting that of our Indigo Bunting. This species is often hard to observe because of its shyness and preference for thick hedges.

**Phoenecurus phoenecurus phoenecurus.** REDSTART. Two seen April 19, at Montoir. One was singing a sweet plaintive song reminiscent of our Vesper Sparrow, but softer.

**Anthus pratensis.** MEADOW PIPIT. An abundant winter visitant at Montoir, feeding on the flooded marshes with the Pied Wagtails and Starlings. A counterpart of our native Pipit.

**Anthus trivialis trivialis.** TREE PIPIT. A tolerably common sum-

mer resident. First seen March 30. Its usual song is sweet but monotonous, but its flight song resembles in a miniature way the outburst of the Skylark, as it starts up from its perch with wings vibrating rapidly, and after ascending for perhaps 100 feet, glides downward, singing all the while, and finally flutters to its perch with the wings extended low, legs hanging, and tail held in a vertical position.

**Motacilla alba lugubris.** WHITE WAGTAIL. Abundant all winter at Montoir, wading about the flooded marshes; becoming less common as the spring advanced, when its place was taken, to a large extent, by the next species. I never heard its song, but once witnessed a curious chattering duet between two males, which fluttered before each other in the air, with their long tails opening and closing during the performance. Ordinarily the tail is wagged quite smartly in walking, and the head bobs backward and forward with each step. While the farmers are plowing the Wagtails desert the marshes and follow the plow, sometimes fairly covering the freshly turned earth. Their call note is a nervous sharp "tseep, tseep, tseep."

**Motacilla flava rayi.** YELLOW WAGTAIL. Resident, but much more abundant in summer, nesting in the marshes. Altho essentially a ground walker, it frequently perches on weed stalks and wires to give its "song," simply a loud explosive "k'seet." Both of the Wagtails fly gracefully in long undulations, opening and closing the tail with each bound.

**Troglodytes troglodytes troglodytes.** WREN. This species resembles more closely the Winter Wren. As a songster it is far superior to our House Wren. I heard its full song in December at Is-sur-Tille and found it common at Montoir.

**Certhia sp?.** CREEPER. Common in autumn and winter at Is-sur-Tille. It is not distinguishable from our Creeper.

**Sitta europaea caesia.** NUTHATCH. One seen, February 14 at Tete d'Or Park, Lyons. Reminded me of a large edition of our Red-breasted Nuthatch, and like that species is fond of pines.

**Parus palustris longirostris.** MARSH TITMOUSE. Common in September along the Tille. Only one flock of four seen near Montoir March 30. They resemble our Chickadee very closely, both in appearance and habits.

**Parus major major.** GREAT TITMOUSE. Abundant resident, generally retiring to wilder sections to breed. They become very tame in winter, coming right into the dooryards to feed, and may be approached very closely. This and the next species are often seen in company, the present one being much the more common. Its notes are a "see-saw" and various chattering and scolding notes resembling the Chickadee's.

**Parus caeruleus caeruleus.** BLUE TITMOUSE. I found this diminutive titmouse tolerably common everywhere, altho never as abundant as the Great Titmouse with which it commonly associates. It is the most energetic and acrobatic of its tribe. The nest is placed in knot-holes in the gnarled oaks which abound throughout the country.



***Sylvia communis communis*.** WHITETHROAT. The Whitethroat is one of the commonest and most persistent singers. Upon its arrival (April 19), the song is most welcome. It is extremely vivacious and reminiscent of our Bobolink, or the Skylark, but softer. As the season wears on, however, it becomes rather tiresome. The Whitethroat is very energetic, its crest, cheeks, and throat feathers usually being held erect. It seems to delight in hiding among the thick hedges and scolding whenever approached.

***Sylvia hortensis hortensis*.** GARDEN WARBLER. This is one of the very finest songsters that I encountered. Its song resembles that of our Orchard Oriole, but is less throaty and more "warbler-like." May 4 and June 14 at Montoir.

***Luscinia megarhyncha megarhyncha*.** NIGHTINGALE. A summer resident, inhabiting dense thickets where it is very difficult to observe, altho its loud and varied song carries to a great distance. I heard it singing at noon on a cloudy day. Part of the song is very rich and full, but certain harsh notes are reminiscent of the Chat's.

***Acrocephalus aquaticus*.** AQUATIC WARBLER. One seen along the Tille, dodging among thick shrubbery near the stream, September 22.

***Acrocephalus schoenobaenus*.** SEDGE WARBLER. A common summer resident in suitable localities on the Montoir bog. First seen May 2. These odd little warblers are very wren-like in habits, dwelling in thick undergrowth and hedges skirting the drainage ditches. They are very secretive and hard to observe, but their loud song and wren-like scolding notes are constantly in evidence in the localities which they inhabit. The song resembles a combination of that of the Marsh Wren and Yellow-breasted Chat.

***Erythacus rubecula rubecula*.** REDBREAST. A common resident inhabiting hedges and brush piles, generally in the vicinity of houses. Its droll song is a curious medley, containing a variety of wheezing and buzzing notes.

***Pratincola torquata rubicola*.** STONECHAT. Resident, much more abundant in summer. Resembles our Bluebird in its feeding habits, perching on a fence post or projecting twig in a hedge and flying to the ground to pick up its food. It sometimes hovers over the grass where a suitable perch is not to be found.

***Pratincola rubetra rubetra*.** WINCHAT.—May 11, three or four seen. Resembles the Stonechat in habits, perching on weed stalks and flying into the grass to feed. Its song is a weak little warble suggesting the Bluebird's, but not so rich in quality and contains some buzzing notes. Common in September at Is-sur-Tille, feeding on berries.

***Regulus regulus regulus*.** GOLDCREST.—Local winter visitant, resembling our Golden-crowned Kinglet very closely, both in appearance and habits. First seen at Is-sur-Tille, September 29. Last seen at Montoir, January 1.

**Turdus philomelus philomelus.** SONG THRUSH. Resident, more common about Montoir in the winter, when it fed on the marshy meadows bordering the bog. Its method of feeding and general actions at this time recall our Robin. Its song, however, is somewhat like the Thrasher's but contains some harsh notes.

**Turdus viscivorus viscivorus.** MISTLE THRUSH.—One at Montoir, January 1. Quite as large as our Brown Thrasher.

**Turdus musicus.** REDWING.—Only one identified, December 31, at Montoir.

**Turdus merula merula.** BLACKBIRD.—A common resident. Acts much like our Robin, feeding on the ground and flying up into hedges when alarmed, with the loud piercing cries which are so often heard from Robins at dusk. Their song, however, resembles that of the Thrasher, without the repetitions. Some phrases are almost as rich as those of the Wood Thrush.

**Oenanthe oenanthe oenanthe.** WHEATEAR.—One feeding in a wet meadow, at Montoir March 30.

*Reading Public Museum, Reading, Pa.*

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## THE BIRDS OF LAKE POOPÓ, BOLIVIA.

BY WILLIAM RAY ALLEN.

THE overflow of Lake Titicaca, especially voluminous during the rainy season, is poured out into the Bolivian Lake Poopó (Aullagas) and the salt marshes and lagoons of Coipasa. Despite a wide-spread popular belief concerning an underground outlet to the Pacific, the entire rainfall is probably taken up by evaporation. The river Desaguadero by which Titicaca drains into Poopó passes near Calacoto through a rock-channel in a narrow valley. This acts as a valve, regulating the flow of the water above. Lake Titicaca, therefore, varies in its level no less than five feet between its highest and its lowest known stages; and Lake Poopó below rises and falls with greater seasonal regularity. It cannot fluctuate more than two or three feet, while the excess overflows into the salt marshes.

As a result of the above situation we have the almost anomalous

occurrence of an extremely flat flood plain at an extremely high altitude; and it is of considerable magnitude also. Lake Poopó is at an elevation of 12,000 feet; it is fifty miles long and half as wide. The surrounding pampa and salt-plain has several times the area of the lake. The greatest known depth of the lake is thirteen feet; and the surrounding plain, except for a few ancient protrusive mountain peaks, exhibits but little greater relief than the lake bottom itself.

The immediate approaches of the lake present a very slight gradient. A zone, in width five to ten miles around it, is nowhere more than a few feet above the water level, except for a few low dunes. The lake may be seen from a distance only by climbing a mountain slope. Due to the confusing mirage, as one draws near he is never sure of sighting it until within less than a kilometer from the water's edge.

The relatively great variation in level under these circumstances brings about a seasonal increase and decrease in the size of the lake that is considerable. The writer visited it in January and February, 1919,<sup>1</sup> at the beginning of a belated rainy season. There was still exposed about the lake's margin a belt of hard, sun-cracked mud a mile wide, which at the height of the rainy season is under water. Moreover the writer waded out into the lake another mile before encountering water that was knee-deep.

In spite of the steady influx from the Desaguadero the deepening of the water at a given point does not proceed with regularity. There is a nearly diurnal rhythm in the overflow upon the mud zone, and a lesser withdrawal between advances. The whole acts very much as a *seiche*. But there is nightly a high south wind which is probably responsible for piling up the water upon the northerly shores. With the increment of water from the Desaguadero each night's flood advances a little further than the preceding.

As is to be expected, the north end of the lake has a much greater amount of mud. At the southern extreme, near Challapata, there is much more sand and the water is clear, except about the mouths of rivers. This end of the lake is fairly free of emergent

<sup>1</sup>As a member of the Irwin Expedition, and traveling fellow of the University of Illinois.

vegetation, such as bulrushes, while the northern portion of the lake, especially toward the east shore, produces enormous areas of the same. The southern portion, on the contrary, is rich in one or two species of *Potamogeton*.

The foregoing lengthy introduction may aid in explaining the few observed facts of local bird distribution which follow. Since Lake Poopó is so nearly inaccessible and so few observers have visited it, any meager, incidental data may have some value.

The reedy northern end of Lake Poopó was found inhabited by a considerable number of species. The bird fauna is not unlike that of the littoral of Lake Titicaca, but lacking some of its forms. There were among others: the Flamingo (*Phoenicopterus andinus*); Ducks; Coots (the Choca, *Fulica* sp.); Ibises; Gulls (*Larus serranus*); Heron (Pajaro bobo); Sentinal (Leke-leke, *Vanellus resplendens*); Hawks (Aquila); Negritos (close relative of our Red-winged Blackbird.) The above were all in abundance upon both lakes.

Correlated with the shallowness of the water of Poopó is the absence of diving-birds. The abundant flightless grebes of Lake Titicaca are wanting. The cormorant, which prefers diving from an elevation, finds unfavorable this lake of only two dimensions. No Gallinules were observed, nor the great goose-like Huayata (*Bernicla melanoptera*.)

Still fewer species were found at the southern end of Poopó. A few plover species, the Gull, and the Flamingo were the only birds to be seen.

The black-headed Gulls occur everywhere on the pampas, even following up the courses of small streams. On Poopó they were few in number, being here reduced to feeding upon the small dead fishes which were to be found.

The Flamingo is rather uniformly distributed about the lake, usually occurring in companies of a score or more, and working in extended order in water of the depth of from one to two feet. In such waters where cover for the approaching hunter is wanting it is manifestly impossible to get within easy gunshot. They may be followed long distances, and will always keep walking ahead of the pursuer, foraging as they go, and seldom resorting to flight. The bird presents a conspicuous, but altogether decep-



tive target. Furthermore at some distance one's image of a Flamingo company becomes grotesquely confused with the elongated reflections in the water and with the mirage. It is thus difficult to gauge the distance, even at long gun-range. This bird occurs in surprising numbers, for it has not only the protection of its own wariness, and of its remoteness, but it is about the only bird of the high Andes which receives much legal or sentimental favor. The sight of the Parihuana usually elicits exclamations of pleasure in any group of men. No evidence of their nesting was seen in either Titicaca or Poopó. The only nesting sites accurately reported by the inhabitants were both in northern Chile—Laguna Roja near Collahuasi, and another lake near Chiu-chiu.

The southerly shores of Lake Poopó are *par excellence* the abode of shore-birds. Several species of plover were taking full advantage of the situation. The writer estimated that for each mile of shore line there were well in excess of ten thousand birds. By all evidence they were chiefly winter residents. No indications of nesting on the part of any species were noted here, nor were the sex glands in the enlarged condition of the breeding season. However, just across the Chilean border at Lake Ascotan, ducklings were found that were nearly old enough to leave the nest. On that morning the temperature at Cebollar across the lake was 14° F., the usual temperature of the season. The nest was adjacent to a warm spring-fed pool at the foot of an extinct volcano. Some heat may have been derived from that source, making the spot more habitable.

Several factors probably contribute to the determination of bird distribution in the altiplane. Lake Titicaca's production of the greater number of species cannot be ascribed to any one or two of these factors. It is much the larger and deeper body. Not only as a matter of size, but through its striking effect in tempering the climate, is this important. In variability of contour—shore and bottom—Titicaca stands at one extreme, Poopó at the other. Aside from its rushes and cattails, the latter affords no shelter whatever.

Lake Titicaca does have remarkably few plant and animal species for the Torrid zone. But, since it is tributary to Poopó and at a higher elevation, it might reasonably be expected to produce the fewer, except for the above environmental factors.

The considerable salt content of Lake Poopó does not likely affect the bird population directly. Yet the latter may be influenced through the effect of the salt upon other organisms. Laguna Salinas is only slightly higher than Titicaca, and within its basin, though cut off from it. In contour, bottom, etc. it is comparable to Poopó. But through its salinity, which is much higher than that of Poopó, it has eliminated virtually all plant life. Very few animal species exist in it—no essentially aquatic species except Phyllopoda, not even fish. Hence, on account of food, there are few birds, if for no other reason. There are numerous Plover, and a few Flamingoes, Ducks and Gulls. Other conditions being essentially the same, then, as in Poopó, this lake pretty well demonstrates wherein salinity does affect the avifauna.

Lake Poopó's fluctuations in level upon its flat flood plain result in a striking separation of food materials, not unlike the sorting of littoral forms upon tidal flats, through their relative size and specific gravity. Here the materials sorted are few in kind. The shore-birds always feed in water of not more than an inch or two in depth, and rarely a hundred feet from its margin. Hence they were sometimes feeding on an advancing, sometimes a retreating lake margin. In each situation some were killed and the alimentary tracts examined for parasites. Especially at the north end of the lake, the stomachs were at one stage of the water filled almost entirely with weevils which were being driven from the shelter of the dry sun-cracks. Upon the withdrawal of the water the Tiutico fed nearly exclusively upon the seeds of *Potamogeton* or *Malacochaete* which were being left by the ebb. The change in diet corresponded always with the stage of the water.

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## MOULDS AND BACTERIA ON EGG COLLECTIONS.

BY FREDERIC H. KENNARD.

DURING the summer of 1916 there came into my possession a small collection of New England eggs, some 1250 in number, which I particularly prized, as having been personally taken by a friend who had passed away sometime before, but with whom I had been on many a collecting trip; and with the history of whose personally collected eggs I was rather intimately acquainted.

Upon acquiring the collection I was surprised to discover upon a number of the eggs, small spots of what appeared to be a tawny mould scattered over the surface. These spots, varying in color from "tawny-olive" to the brighter "ochraceous-tawny" of Ridgway<sup>1</sup> were small, often so minute as to require a glass for their discovery; and seemed to be pretty generally distributed over the surface. Many of the infected eggs had but a spot or two, which were hard to distinguish in some cases from markings, while on others there were larger and very evident spots, often with a characteristic dendritic appearance, and many of them with fine filaments of the cotton on which they had been laid still adhering. On a very few of the eggs, soiled seabirds' and the like, there seemed to be other mould of some common kind.

I applied to several friends at this time for advice; but only two of them had ever encountered similar trouble, and while they knew of no sure cure, I was advised to clean the eggs with Bon Ami soap, applied with warm water and a soft rag; and then after drying, to put them away in a dry place.

Upon a careful examination of every egg in the collection with a ten-power magnifying glass, I found that apparently one or more eggs in eighty-nine sets, out of a total of 262,—over thirty per cent,—were more or less infected.

Of these I broke up thirteen sets—several accidentally, and the rest deliberately,—in order to find out whether or not the insides of the shells were similarly affected. Aside from a very few exceptional cases, where the growth happened to develop about the

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<sup>1</sup> Color Standards and Color Nomenclature by Robert Ridgway.

blow-hole, and for perhaps half a millimeter around its inner edge the insides of the eggs appeared to be free of the trouble.

After this examination, I carefully cleaned all the eggs, the infected, as well as those which appeared to be uninfected, with Bon Ami soap;<sup>1</sup> and found the spots readily removable, except in a very few aggravated cases, in which the tawny growth seemed to have eaten into the substance of the shell, and left a slightly discolored pock-mark. The markings of the eggs seemed to be pretty well fixed, with the exception of the Falconidae—Duck Hawk, Pigeon Hawk and Sparrow Hawk—and some of the more highly pigmented seabirds, —Murres, Razor-billed Auk and the like, on which great care had to be used not to rub off the color.

After cleaning the eggs, I washed each of them with grain alcohol, in the hope that this might kill any of the growth or spores that might remain, and then after thorough drying, put them away in airtight cases, the apparently uninfected eggs in one, for further observation; and the infected eggs in another; and kept them all away from my own collection, which had always been spotless.

Having necessarily by this time become very much interested in the problem, I sent a few specimens during the autumn of 1916 to the Bureau of Biological Survey, Washington, D. C.; and was informed by them, after they had submitted the specimens to experts in the Bureau of Plant Industry, that the growth was a fungus, a species of penicillium "grown on albumen left on the surface of the eggs at the time they were blown," and that the color of the spots was probably due to dirt having accumulated at those points. It was thought that all the eggs needed was a thorough cleaning, and it was wisely suggested that I scrub the eggs with a solution of mercuric chloride, commonly known as corrosive sublimate, 1 to 500, dry thoroughly, and then keep them in a dry place, as "unless the egg is kept in a very damp place, there appears to be no danger of continued growth of the fungus."

Now I am no cryptogamist, and there doubtless were spots of penicillium growing on some kind of organic matter on those parti-

<sup>1</sup> I can recommend Bon Ami soap for anything of this sort; mould, dirt or even ink spots being, in most cases, readily removed by it.



cular eggs which I sent the Biological Survey—they were a few my friend had acquired by exchange, Seabirds, Murres, Cormorants, etc. and we all know what they may look like,—but inasmuch as my friend who had made the collection had always taken scrupulous care in blowing, cleaning, and rinsing his personally taken specimens, which were apparently just as badly infected as the Murres' and Cormorants' eggs; and had kept them in a specially built and practically dust-proof cabinet, in a dry place, it did not seem to me that the penicillum could be the cause of all the trouble. The coloring of the tawny spots seemed not to be due to dirt, and the spots themselves were too evenly distributed, not centered about the blow-holes, and on shells that appeared perfectly clean. They had also flourished in too dry an atmosphere to fit the diagnosis.

Illness prevented my treating the collection with mercuric chloride at this time; but as I had cleaned the eggs pretty thoroughly, and washed them with grain alcohol, and put them in a dry, place as advised, I hoped that perhaps no further treatment might be necessary.

A part of my collection is kept on the best quality absorbent cotton in pasteboard trays, in drawers in airtight metal cases; while those sets that were collected with their nests, are kept in specially made glass-topped pasteboard boxes, airtight, bug, fungus and fool-proof; and all in the third story in my house, dry, warm and well ventilated at all seasons; and I had previously never had any trouble of any sort.

During the ensuing months I inspected the eggs from time to time; and after a year or so found, to my disgust, that minute spots of the tawny growth were reappearing; but it was not until the autumn of 1918 that I was able to examine the collection again carefully with a glass. I then found that the growth, though apparently very slow of development, had started up again on about thirty per cent of the previously infected sets; and what was worse, had begun to show itself also on about twenty per cent of those that I had thought were uninfected; and this on specimens that had all been cleaned, as well as it was mechanically possible, of all albumen, dirt, or whatever else the growth was supposed to live upon. Evidently I had locked into these cases, in the cotton or

elsewhere, and in spite of all the pains I had taken, enough spores to perpetuate the trouble.

I cleaned them all again with Bon Ami soap, having again to remark a large number of the specimens; and then gave them all a bath, as prescribed by the Biological Survey, in a solution of mercuric chloride, one to five hundred; submerging them for from ten to twenty minutes according to the size of the eggs and the toughness of their shells; and then after rinsing them in fresh water, submerged them in another bath of fresh water for another period of from ten to twenty minutes, in order to be sure that none of the solution might remain inside, in such strength as to cause discoloration later about the blow-holes, which I was told might occur on improperly washed eggs when exposed to the light. As a matter of fact out of 1250 eggs, only one later showed a slight discoloration.

As I have never found the trouble on the inside of the shell, except in a very few exceptional cases immediately around the inner edge of the blow-holes, I figured that if the eggs were totally submerged, holes down, the solution would be sure to press up into the blow-holes far enough to reach all the trouble.

I used a series of enamel iron pans, deep enough to submerge the largest eggs, a number at a time, without overflowing; and I kept the eggs submerged by means of floating wooden covers, fitted to the pans, and weighted down sufficiently with small blocks of wood, so as to keep the eggs properly beneath the surface. I handled the eggs in the solution with surgeon's rubber gloves, and as was to be expected, lost a few of the more delicate specimens. A Warbler's egg, that has been taken in an advanced stage of incubation, does not take kindly to such heroic treatment, even in water; and too long continued a bath seemed to weaken a few of them perceptibly.

After blowing all of them that contained any appreciable amount of the water in which they had last been rinsed, I placed them, holes down, on clean absorbent cotton for twenty-four hours; and then placed them, holes up, in trays in an open cabinet, to the front of which I applied an electric heater for another twenty-four hours, to insure their being absolutely dry. I then placed them on clean cotton,—the best sterilized absorbent,—in clean trays, in clean

drawers, previously washed with mercuric chloride, in similarly treated cases; and though I have watched them carefully to date—August 12, 1920—have been unable to discover any recurrence of the trouble.

In order to find out how widespread the trouble might be, and under just what conditions it was most apt to occur, I communicated either personally or by letter, with a number of ornithologists throughout the United States and Canada. Of these, sixty-four either owned or had charge of egg collections, and twenty-six or over forty per cent, had had more or less experience with foreign growths of some sort on their eggs, while thirteen of these, or about twenty per cent, had had their collections seriously affected. Four had acquired collections with infected eggs, but had gotten rid of the trouble with comparative ease; and nine had only had isolated cases from which the trouble never seemed to spread. Personally, I believe, that if examined carefully, a majority of the collections would have been found to have contained a few infected eggs. The tawny growth seems to have been the cause of most of the trouble, as only a few had had much experience with commoner forms of mould.

One of the best known of our oölogists writes me that "the mould or fungus you refer to is, aside from the dermestes, the only thing the oölogist has to contend with, except light and dampness," and an ornithologist of international reputation writes me "as regarding the fungus that attacks eggs, I can only say that my collection is being destroyed by it, and I do not know how to stop it."

I saw a collection the other day, and I know of a number similarly affected, which had been stored in an airtight "Cambridge can" in a friend's warm, dry attic for a number of years. It was a collection that had been made and kept with a great deal of care, but which had become infected in some way with the tawny growth, and absolutely ruined by it.

With regard to the conditions under which the various collections were kept, I find that of the twenty-six infected collections, the thirteen in which the trouble never became serious were all kept in warm, dry, and comparatively well ventilated rooms; while of the thirteen that were seriously infected, a majority were kept under questionable conditions, in rooms that were cold and damp

and ill-ventilated, at least during certain seasons of the year, and four were kept under supposedly favorable conditions. Yet two of these last, kept in airtight metal cases, in warm, dry attics, were the worst infected collections that came to my notice. It may be only a coincidence, but in a number of collections the growth seemed to have spread also to the cotton on which the eggs were placed, and each time on cotton of inferior quality.

Of the thirty-six collections that were reported uninfected, twenty were kept in rooms that were apparently well aired and dry, three were kept in rooms that were damp, unheated, or closed, at least a part of the year; while thirteen of my correspondents failed to describe the conditions under which their collections were kept.

Most of my correspondents thought the cause of the trouble was dampness, particularly at certain seasons of the year; a number added "dirt;" and two or three laid all the trouble to the "small hole crank" who does not blow or rinse his eggs properly; while nearly all those that had been free from the trouble, were quite sure that their particular method of keeping collections was responsible for that freedom; and one or two enthusiasts were equally sure that they owed that freedom to the salubrious climate in which they lived. As a matter of fact, I found that the growth occurred there, just as elsewhere, and may apparently occur anywhere.

Among the numerous remedies suggested were, cleaning with warm water, ordinary soap, Bon Ami soap, Sapolio, heat, moth-balls, fumigation with bisulphide of carbon or with formaldehyde candles, or with dishes of formaline in each cabinet; immersion in salt water or gasoline; poisoning the interior of the egg with a weak solution of copper sulphate; treating the eggs with solutions of formaldehyde, peroxide of iron, bicarbonate of soda, carbolic acid, acetone, mercuric chloride, and izal. It was also recommended that unslaked lime or calcium chloride be kept in dishes in cabinets to absorb undue moisture; and one of our foremost scientists, while not believing in moth-balls as a remedy, was inclined to believe that they might possibly act as a deterrent.

Of the specimens that seem most apt to be attacked, one well known collector writes "smooth, plain eggs, notably duck eggs,



are affected, but also white eggs, such as owls, wood-peckers, kingfishers."

Another writes that "the *Raptore*s are the favorite eggs attacked;" while still another writes "the glossy eggs are seldom affected unless very dirty; soft-shelled eggs with roughly or finely granulated surfaces are most seriously affected, e. g. my Gadwalls, 'Phoebes' and Swallows' eggs show the highest percentage."

In my own case the growth seemed to be pretty generally distributed, but the eggs of grouse and gallinules were worst affected, while the *Raptore*s were practically free. As a matter of fact, I find, after looking over a number of infected collections, that the growth seems entirely impartial in its tastes, and those eggs which happen to be within reach of the point of infection, may become infected, apparently regardless of color or texture.

After duly assembling, tabulating, and endeavoring to digest all the above seemingly rather contradictory data, in the spring of 1919, feeling quite sure I had permanently cured the trouble in my collection, and being more curious than ever as to the cause thereof, I asked Prof. S. C. Prescott of the Massachusetts Institute of Technology to investigate the cause of the trouble; and to suggest, if he could, some better method of getting rid of it. That which I had adopted was clumsy and bothersome and was hard on the more fragile eggs, because of the repeated handling and necessary re-marking, and I wanted, if possible, to discover some method of fumigating, as with carbon bisulphide, formaldehyde or something of the sort, which would be convenient for all collectors.

While Prof. Prescott was not able to give all the time and attention to the problem he would have liked, his investigations were carried on for a number of months, during which a large number of eggs were examined, from a number of infected collections, and from which there were obtained numerous cultures for a long series of tests.

Under date of July 31, 1920 Prof. Prescott writes as follows:

"Repeated examination of the infected birds' eggs has shown that the discoloration appears to be due to a large spore-forming bacillus which develops brownish colonies very slowly on the external surface. It is possibly an undescribed species, although cultures and microscopic appearances are so close to the potato bacillus that there can be no doubt

as to the group to which it belongs, and I have classified it provisionally as a variant of the *Bacillus mesentericus fuscus*. Occasional eggs show also the presence of fungi, but the main cause of the trouble appears to be the bacillus. This organism grows even in rooms which are very low in humidity, and may therefore appear in what would be dry chambers. While treatment with corrosive sublimate or other strong disinfectant-solutions is troublesome and time-consuming, and the ideal method of disinfection of large collections would be by use of gaseous disinfectants such as formaldehyde, the high resistance of the spores makes the fumigation of the eggs by formaldehyde or other gaseous disinfectants uncertain, as the destruction may not be complete and successful. If spores are not destroyed, they may possibly develop later with slight changes in the atmospheric conditions. We are, therefore, at this time unable to recommend any easier procedure than treatment with solutions of corrosive sublimate which appear to be effective. A treatment of five or ten minutes with a 1 to 1000 solution will probably be sufficient to destroy the infection and prevent further developments."

To summarize, it appears from the evidence obtained, that specimens should not only be thoroughly blown, rinsed, and cleansed of all organic matter when added to one's collection; but should be kept in dry, well ventilated rooms in dust-proof cases. Under such conditions, ordinary moulds, "mucor, aspergillus, penicillium, eurotium, and a few less common forms," all of which were found and isolated by Prof. Prescott, are little to be feared, and are controlled with comparative ease.

On the other hand, the tawny bacillus mesentericus fuscus, though slow of growth, seems when once introduced, to spread under just such conditions; to grow upon the surface of the shell itself, which it may injure; and to be particularly difficult to eliminate; confinement in airtight cases in a dry place seeming at times to aid in its development.

To recapitulate regarding treatment; upon discovery of the trouble, all sets of infected eggs, and when possible, all those that have been exposed to infection, should be cleaned, when necessary, with Bon Ami soap, applied with an old linen handkerchief, or soft rag of some sort. Particular pains should be taken at this time to re-mark with great care, all eggs from which the set-number has been erased during cleaning, and it is right here that the casualties are most apt to occur.

Then the eggs should be totally submerged, blow-holes down,

in a solution of mercuric chloride, 1 to 500. Get the ordinary commercial white tablets from your druggist, and dissolve 4 to the quart of water, in glass or enamel iron pans or dishes of some sort, not susceptible to the action of mercuric chloride, and deep enough to submerge the largest of the infected eggs.

Since treating the collection, we have found by further experimenting with cultures in the laboratory, that a submergence of one and a half minutes in mercuric chloride, 1 to 500 will kill the spore-bearing bacteria. Under the less favorable home conditions, it seems to me that a submergence of from three to five minutes, according to size and texture of the egg should not only be ample time to kill all bacteria, but can do no harm to the shell itself.

After this bath, the eggs should be rinsed in running, or frequently changed water, and then again submerged, in a bath of fresh water, for a period of from 5 to 10 minutes according to the size and texture of the eggs.

When there are a number of eggs to be treated, surgeon's rubber gloves may be used, and several sets of pans, in order to facilitate handling, as well as to insure against mixing the eggs. I never place two sets of the same kind, or even similar eggs, in the same bath at the same time.

After this bath, blow out any water that may remain in the eggs, then wipe carefully, and place, blowholes down, on a sheet of absorbent cotton for 24 hours or until drained; then turn, and place holes up for another 24 hours, in a warm dry room, and if possible, help the drying-out process with a little extra gentle heat, as for instance, an electric reflector or something of the sort.

When the eggs are put away in the cabinet, particular care should be used to see that whatever material they are placed on, as well as the trays or drawers they may be placed in, are absolutely clean, and free from all possible previous contamination by the fungi or bacteria. A few spores inadvertently left on the cotton or sawdust, or whatever medium is used, may bring on an exceedingly unwelcome recurrence of the trouble.

I got rid of it with infinite pains, as described above; and while I realize that my method was far from ideal, it certainly was effective, even though Prof. Prescott seems to think the solution

stronger than necessary; and as such I offer it to my fellow-sufferers, until some equally sure but more convenient method may be devised.

With at least two out of every five collections more or less infected, and at least one out of every five seriously affected by the trouble, and with specimens constantly being exchanged between collectors, the situation seems to demand attention.

After this all eggs received by me from doubtful sources will be quarantined and treated with corrosive sublimate. Eternal vigilance should be the price paid by those that do much exchanging; and unless some better method of treating the infected collection is devised, those collectors who really value their eggs, should keep their sets either in tight glass topped drawers, or better still in individual, spore-proof, glass topped paste board boxes<sup>1</sup>, where the accidental introduction of an infected set can do little harm. The private collections of the late William Brewster, Messrs. John E. Thayer, John Lewis Childs, and a number of others that I know of, are kept in this way. It seems to me the only way for museum collections, where eggs generally fail to get the loving care they do from individuals; and the sooner the rest of us adopt this method, the sooner we may be able to control or check the spread of the disease. It is the ideal way of keeping eggs; and while it may cost a little more money, it is certainly worth while. When one thinks of all the money one spends on collecting trips, and in the general rounding up of specimens, the extra cost of such boxes is hardly worth considering.

Some three months after the above paper had been sent to the Editor, I chanced, while attending the meeting of the A. O. U. at Washington, D. C., to foregather with Mr. J. H. Riley of the U. S. National Museum, and from him learned of a method of cleaning eggs, which had been used successfully at the Museum sometime prior to 1903, when Mr. Riley had treated a number of infected eggs, upon which there seems to have been no recurrence of the trouble.

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<sup>1</sup> Beautiful boxes of this sort are made to order in sizes desired, by the Dennison Manufacturing Co., 26 Franklin St., Boston, Mass.



Chlorinated soda and "Javelle Water," which is chlorinated potash, seem to have been used impartially and with equal success. Both are strong bleaching agents commonly used as disinfectants, in the removal of mildew, etc., and in museums for the cleaning and bleaching of bones. The use of these chemicals for the cleaning of eggs, was confided to Mr. Riley by Dr. W. L. Ralph, who succeeded Major Bendire as custodian of birds eggs at the U. S. National Museum. Mr. Riley writes that "Dr. Ralph always maintained that the use of this solution on eggs was his secret, and would never let me tell of its use, but as he is dead now [he died in 1907] you can make any use of the knowledge of this preparation you have a mind to. In fact I think its use should be more generally known."

With regard to method of treatment, Mr. Riley writes as follows: "Poursome of the liquid into a shallow china saucer, or other earthen vessel, then if eggs are to be cleaned, dampen an old linen handkerchief, and carefully wipe the spot to be cleaned, and note the action. When the stain has been removed, thoroughly wash the egg in clean water, and allow to dry. Care should be taken with pigmented eggs, but white eggs need not be watched so closely."

. . . "I should not think of trying to clean pigmented eggs without the greatest care, and as follows: Barely have the cloth damp with the solution, and have a basin of clear water right at hand. Then lightly touch the spot to be cleaned with the damp cloth, and lightly brush it. On the first sign of bleaching, or when the stain is removed, thoroughly wash in clean water."

. . . "Eggs so badly nest stained that the markings could not be seen at all, I have cleaned so nicely that you would never know that they had been stained at all."

Mr. Riley writes further that "This solution can also be used in removing embryos from badly incubated eggs. Introduce it into the egg with a syringe. I have left it overnight in a large egg. You will have to experiment to find out how long to leave it in an egg, as it varies with condition and size of egg, of course."

Prof. Prescott and I have since done considerable experimenting, with both the Chlorinated soda and Javelle Water; and while they certainly proved to do all that Mr. Riley said they would, I should hesitate to recommend them for general use, at least so far as the removing of spore-bearing bacteria is concerned.



Both chemicals act very quickly upon the shell itself, unless diluted with four parts water, and even then should be used with the greatest care, especially on what may be called surface-pigmented eggs. In addition to the risk attached to this method of treatment, the mere wiping of eggs can hardly be as thorough as a total submergence, (it is difficult for instance to wipe around the inside of the blow-hole); and as we find that, under favorable laboratory conditions, it takes chlorinated soda, one to four parts water even longer to kill the spore-bearing bacteria than it does corrosive sublimate, a submergence of pigmented eggs long enough to be affective is apt to injure both texture and markings. Bon Ami soap and warm water will be found, in most cases, to be just as affective, so far as the actual cleaning of the shell is concerned, and far less dangerous.

While we had no eggs with embryos, on which to experiment, the use of these chemicals in softening up membranes and other matter that might remain inside the shells, was truly remarkable. A solution of one part chlorinated soda and four parts water, shaken up in an egg, would quickly soften any remaining membrane; but small eggs left over night showed a distinct deterioration, the chemical having eaten its way through, and leaked out of some of the smaller ones, while eggs even as large as Spotted Sandpiper's became very fragile.

If I had a few large unspotted eggs that needed cleaning I might try Dr. Ralph's method, but in any other case, it seems to me that treatment with corrosive sublimate is, in comparison, not only safer, but better in every way.

Thanks are due to the many ornithologists, oölogists, members of the Biological Survey, Mr. Riley and others, and to Professor Prescott in particular, who have, with considerable patience helped me in this investigation.

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NOTES ON A COLLECTION OF ACCIPITRES FROM  
THE MERIDA DISTRICT, W. VENEZUELA.

BY H. KIRKE SWANN, F. Z. S., M. B. O. U., C. F. A. O. U.

THE collection forming the substance of the present paper was received from Venezuela, through the instrumentality of Mr. W. F. H. Rosenberg, in June of 1920, and comprises the *Accipitres* collected in the years immediately preceding the war by Bricéno Gabaldon e Hijos, of Mérida, and I have added a small selection of skins from the same source previously received. The total number of skins is 140, referrable to 24 forms, of some of which very good series are presented. The numbers prefixed are those of my "Synopsis."

1. *Vultur gryphus gryphus* (LINN.), S. N., i, p. 86 (1758) [Chile]  
♀ (?) near Mérida, circa 1912 (ticket perished).

An example in the brown plumage, without any sign of caruncle or wattles, wing 830 mm., indicating a size above the average. The species is probably not common from Venezuela, but the British Museum collection contains one other skin, female in the black and white plumage, from the same locality, with the wing 798 mm. An Ecuador female in same plumage which I have examined had the wing 786 mm., and a large male from the Andes, 798 mm., an immature male in brown plumage, 808 mm.

- 51a. *Climacocerus zonothorax* CAB., J. f. O 1865, p. 406 [Porto Cabello, Venez.]

3 ♂ 3 ♀ Montana Sierra. Valle and Chama, 1906-11, alt. 2000-3000 meters; ♂ Limoues, September 15, 1906, alt. 700 m. All in more or less immature plumage. One male is in first plumage, with buff underparts, the other birds all being in various stages of barring. The wide bars fairly well spaced suffice to distinguish this species from *C. guerilla* and it is certain that *C. zonothorax* is the species most common in Venezuela. It generally shows at all stages a well-defined white collar on hind neck, and the head is blackish brown; the throat white with a brown zone on foreneck. An example stated to be the rufous phase of this species in the British Museum collection from Venezuela (Spence) is in my opinion a rufous phase of *C. guerilla* and not this species as may be seen by the close and fine barring below and by the uniform head, hind neck and throat.

105. *Accipiter collaris* (KAUP) MS. in Mus. Brit. undé; Scl. Ibis 1860, p. 148, pl. 6. [New Granada-Bogota].

One immature Mérida dist. circa 1913 (orig. label perished).

I append a description of this example of this very rare hawk as it differs greatly from the Bogota juvenile described and figured by Sclater (*cf. supra*) although it agrees very well with an immature bird from the same district in the British Museum collection. The size of the feet and claws prove this bird to belong to the genus *Astur* rather than *Accipiter*. The only previous examples known to me are the two in the British Museum collection and one at Norwich.

Head and nape deep blackish chocolate, nape with a concealed white spot; above, including wings, chestnut red, clearer on the tail, which is crossed by 6 narrow black bands; throat whitish; below paler chestnut, the sides of the chest and flanks banded with darker chestnut; under wing-coverts pale chestnut; inner webs of primaries and secondaries banded with black; tibial plumes deep chestnut red, with traces of dusky bars. Total length about 265 mm.; wing 162 mm.; tail 127 mm.; culmen, including cere, 18 mm., tarsus, 40 mm., middle toe without claw 35 mm., middle claw 13 mm., outer claw 9 mm., inner and hind claws 22 mm.

(112a.) *Accipiter chionogaster venezuelensis* subsp. nov.

♀ (?) Escorial, Mérida dist. Feb. 17 1911, 2500 meters, in coll. H. Kirke Swann; and ♀ Escorial, Sept. 10 1896, Tring Mus. coll.

Type. Escorial, Mérida dist. 2500 meters, February 17, 1911. Coll. H. Kirke Swann.

*Characters.*—This new subspecies agrees well with the typical form from Guatemala, in the snowy white underparts, with only a few faint hair-lines on chest, but the tibiae are rather more rusty whitish coloured, although far paler than in *A. salvini*, and are faintly marked with dusky cross-bars: above it differs from the typical form in the much paler slate-gray shade, especially on the head, which is black in the typical form; the dark tail bands are wider and the pale interspaces narrower. Wing 196-198 mm. (in Guatemala female wing averages 208, male 172 mm.) The cotype in the Tring Museum differs only in the absence of the faint crossbars on the tibial plumes.

113. *Accipiter salvini* (RIDGW.) Bull. U. S. Geol. Surv. ii, p. 121 (1876). [Mérida, Venezuela].

3 ♀ Escorial, ♀ Montanas Conefos, ♀ Blechitera, ♂ Valle, juv. ♂ Montanas Valle, 2000-2500 meters.

The juvenile in this species has the lower parts rather whiter, the stripes paler, narrower and more longitudinal than in *A. ventralis*, with no apparent bar.

114. *Accipiter ventralis ventralis* SCLAT. P. Z. S. 1866, p. 303. [Interior of Colombia].

2 ♀, 2 ♂ Valle, ♂ ♀ Escorial, 2 juv. ♂ Valle, 1904-11, alt. 1500-3000 meters.

None of the adults are in quite uniform rufous plumage below, the most adult female having the rufous of chest and breast broken by white spots

or bars. One male, however, has rufous of under parts more nearly uniform but under tail-coverts white.

Anad. Culata, August 19, 1912, alt. 3000 meters, I doubtfully refer to this species, which it resembles above, although the black tail bands are wider and the gray interspaces narrower; below the rufous is paler and the chest uniform ashy gray. One other such example from the same district is in the British Museum collection.

123. *Accipiter bicolor* (VIEILL.), N. Dict., x. p. 325 (1817) [Cayenne].

Ad. ♀ Culata, March 11, 1908, alt. 2,500 meters.

128. *Heterospizias meridionalis meridionalis* (LATH.), Ind. Orn. i, p. 36 (1790). [Cayenne.]

No examples in the collection from Venezuela, although several from there are in the Tring Museum and British Museum collections. I find on examination that the northern (typical) form is smaller than examples I have received from Argentine, while the latter differ considerably in plumage, showing little or no trace of gray above. I therefore propose to separate the Argentine birds under the name of —

128a. *Heterospizias meridionalis australis* subsp. nov.,

♂ Laguna de Malima, Tucuman, Argentina, March 31, 1902, coll. Dinelli, in coll. H. Kirke Swann; ♀ Tucuman, May 23, 1900, coll. Dinelli, in coll. Tring Mus.

Type. ♂ Laguna de Malima, Tucuman, Argentina, March 31, 1902, coll. Dinelli. ♀ In coll. H. Kirke Swann.

*Characters.*—Larger and much darker above than typical form; mantle and scapulars blackish brown with rufous margins in place of pale slate grey with rufous margins; below averaging darker and with the dark bars wider and more numerous.

Wing in male (type and cotype) 415–17 mm., female (Tring Museum) 430 mm., against 386–404 mm. in Venezuelan male, 398–417 mm. in Venezuelan female, 405 mm. in Guiana female, 398 mm. in Bolivian male, 390 mm. in Brazilian (Matto Grosso) male, all the latter being typical birds.

129. *Geranoaetus melanoleucus* (VIEILL.) N. Dict. d'Hist. Nat., XXXII, p. 57 (1819). [Paraguay.]

4 ad. ♂, 2 juv. ♂, 2 juv. ♀, 2 nestlings, Culata, Escorial, Paramos de Morro, Paramo Escorial, Nevada, alt. 2500–3000 meters, January to October, 1907–12.

These examples appear to be a trifle smaller in size than Patagonian birds. Wing, male, 455–468 mm., tail 215–227 mm., wing, female, 480–525 mm., tail 252–303 mm.

Three of the juvenile birds have the tail slate gray numerously barred with black, while the fourth has already acquired the uniform black tail; all have the chest bright ochre. Of the two nestlings, one is in white down, with only the dark feathers of the wings and tail appearing and a few rufous feathers on sides of breast; the other is nearly fledged, with nearly all the rufous ochre chest-feathers and the white down only left in



patches, chiefly on the throat, chest, thighs and under side of wing; the feathers appearing on the latter and on the abdomen are black, instead of rufous barred with black as in the immature dress.

146. *Buteo platypterus platypterus* (VIEILL.), Tabl. Ency. Meth. iii. p. 1273 (1823) [near Philadelphia].

8 ♂, 5 ♀, 4 juv. ♂, 1 juv. ♀, Valle, Escorial, Culata, Conejos, Epelo. Nevados, Jufi, Aug. 14 to March 15, 1903-13, alt. 1200-3000 meters. Presumably the Venezuela birds are all migratory and there are no examples taken between March 15 and August 14.

147. *Buteo abbreviatus abbreviatus* CAB., in Schomb. Reis. Guiana, iii. p. 739 (1848) [Brit. Guiana].

I have received from Dr. Reichnow some particulars of Cabanis' type of *B. abbreviatus* now in the Berlin Museum, as well as a drawing of the outer tail-feather, which leave no doubt that Cabanis' species is a tenable one and corresponds with the "nearly adult (type of *B. albonotatus*)" of Sharpe (Cat. Bds. B. M. p. 163) now in the British Museum collection. Therefore *B. albonotatus* as resuscitated by Mr. Sclater in that collection must drop as being a synonym of *B. abbreviatus*, while the birds referred to *B. abbreviatus* must be regarded as black examples of *B. albicaudatus*. One juvenile bird from Guiana in my collection, described under No. 152 b., as well as a similar juvenile referred to *B. abbreviatus* in the Tring collection represent apparently the first juvenile stage of *B. albicaudatus*, a species which starts very dark and lightens with maturity.

Melanism in the South American Buzzards is in fact frequent. The form known as *B. unicolor* and so designated in the Tring Museum, I believe is correctly to be referred to *B. erythronotus*. The black birds from Venezuela, Guiana, etc., with the tail resembling *B. albicaudatus*, either adult immature, are I believe nothing more than melanistic of *B. albicaudatus*.

I take this opportunity of stating that further examination of this difficult question convinces me that the bird I described (Synoptical List p. 51, No. 147a, 1919) as *Buteo abbreviatus minimus* is, from its size, a melanistic example of *Buteola brachyura* and not a small form of *B. abbreviatus* as I previously supposed, especially as *B. abbreviatus* is itself a large edition in appearance of *Buteola brachyura* (= *B. fuliginosa* Sclater) in which the tail is marked exactly as in the younger examples of *Buteo abbreviatus*.

I give a brief description of the type of Gray's *B. albonotatus*: Male (?) from Mexico, ex coll. J. Taylor, which Sharpe correctly designated as the younger of the two plumages: Blackish above and below, with more or less concealed white spots, especially on the under surface; the nape feathers white, except at tips, showing conspicuously; tail with about 6 ashy brown bars (appearing white below) the black bars narrow, except the terminal one which is 28 mm. wide; primaries below with narrow bands



of blackish brown, the wide interspaces ashy white; under wing and tail-coverts black; wing (measured as usual on underside) 405, tail 215, tarsus 75, middle toe without claw, 45 mm.; first 4 primaries notched.

The adult plumage, correctly described by Sharpe, as exhibited by Mexican examples, shows none of the white spots above and below, but white of nape is still exhibited; the tail has one broad median band of lighter grey, with a second narrower one nearer base, both showing very white below. Intermediate stages of plumage exhibit 5 and 4 of the ashy brown bands showing that they reduce with maturity, the subterminal one widening correspondingly. A male from Surinam in the Tring collection has four ashy brown bars above, but six white ones below; wing 385 mm. The inner face of primaries appears more slate colour in adults. Other Mexican male birds in the British Museum collection have the wing 392-400 mm. Two Mexican male examples in the Tring Museum have the wing 405 and 419 mm. There is no female in the British Museum collection, but one in the Tring collection from Bolivia has the wing 450 mm. A male from Peru in the British Museum collection has a wing of 380 mm.

152b. *Buteo albicaudatus exiguus* CHAPM., Bull. Am. Mus. N. H. XXXIV, p. 637 (1915). [Barrigon. Colombia.]

1 imm., Montañas Morro, May 29, 1911, alt. 1500 meters. In immature plumage, wing 411 mm. On account of its small size the example is presumably referable to this form.

I possess also a more juvenile male from British Guiana, February, 1898, ex coll. W. S. L. Loat. Above brownish black with white bases to feathers of head and interscapular regions; feathers of rump browner, with white bases and buff margins; sides of rump and upper tail-coverts white; tail feathers ashy brown, with narrow, indistinct, darker bars, the inner webs whitish; below buff, heavily marked with black, especially on chest and sides of breast; inner face of wing quills grayish, banded with black; wing 305 mm. (not fully grown.) This juvenile bird so closely suggests the blackish immature birds of *B. albicaudatus* that I do not hesitate to refer it to this species. A similar bird in the Tring Museum is referred to *B. abbreviatus*.

155. *Buteola brachyura* (VIEILL.) N. Dist. d'Hist. Nat., IV., p. 477 (1816). [Cayenne.]

♀ (? marked ♂) Escorial, August 18, 1913, alt. 3000 meters. In adult plumage, blackish above with four broad black bands on tail; sides of chest black, with some light brown lower margins: the rest of under parts pure white; wing 316 mm.

2 ♂ Valle, June 15, 1911, November 20, 1913, alt. 2500 meters. Both in immature plumage; buff below, the first with a very few dark striations on sides, the second with rufous edgings to feathers of upper parts, tail with nine narrow, dark bars, hardly apparent above; wing 290 and 298 mm.

♀ Escorial, October 28, 1911, alt. 2800 meters. Like first of the immature plumages above; wing 335 mm.

♀ Monte Sierra, April 18, 1911, alt. 3000 meters. Like the second of the immature plumages above; wing 323 mm. These immature plumages show very little black on sides of chest.

♀ juv. Culata, August 15, 1911, alt. 3000 meters. With the under parts buffish white chest marked with longitudinal blackish stripes and lower breast heavily blotched across with blackish brown; tail more visibly barred; wing 316 mm. One such example is in the British Museum and one in the Tring Museum and I therefore refer it to this species; and must suppose it to be the most juvenile plumage, as the buff under parts are evidently succeeded by the white plumage.

158. *Rupornis magnirostris magnirostris* (GMEL.) S. N. i. p. 282 (1788). [Cayenne].

11 ad., 3 immature, Valle, Culata and Escorial, June to December, 1907-11, alt. 2000-3000 meters; 1 nestling, Valle, July 12, 1908, alt. 2000 meters.

Wing 208 mm. (smallest male)—232 mm. (largest female). If the birds with largest wing measurement are females (sexing being questionable) they are much less rufous below than male birds. The immature birds have the feathers edged with buff above; and the chest buff with longitudinal blotches of brown; tail with four instead of three bars of black; otherwise they differ little from the adults.

The nestling (a newly fledged bird) is in similar plumage to the immature birds, even to the tail, which however is only just growing; the cross barring of under parts is also present as in the adults.

Birds from northern Ecuador in my collection do not agree with Venezuelan or Guianan birds, but the individual variation is so great that I do not think they can be separated. An example from Vaquerói, N. Ecuador, shows a strong tinge of rufous in the tail and of buff on upper tail-coverts and has the secondaries as well as primaries rufous on inner webs, but a second example from the same region has no buff on upper tail-coverts and no rufous in tail (cf. Chapman, Bull. Am. Mus. N. H. XXXVI, p. 244, 1917). Both these birds are almost as pale grey above as typical examples but a male from Chauchamayo, Peru, has the upper parts very much browner, yet has no rufous in tail or secondaries, nor yet any buff on upper tail-coverts. Bangs' form *occidua* from Rio Tembopata, E. Peru, is distinguished solely by having the chest "bright cinnamon rufous" instead of gray, but Peruvian birds from other districts do not show this.

A pair of birds in the Tring Museum from Chimbo, Ecuador, lack the buff on upper tail-coverts. The male has the light tail bands strongly rufescent, especially on anterior and posterior edges; the female however has no visible rufousness on the tail.

159. *Rupornis leucorrhoa* (QUOY ET GAIM.) Voy. de l'Uran. p. 91, pl. 13 (1824). [Brazil.]

♂ Culata, October 20, 1913, alt. 3000 meters; ♂ ♀ Montanas Sierra July 11, 1911, December 14, 1910, alt. 2500 meters; 2 ♂ Escorial, September 18, 1911, September 15, 1913, alt. 3000 meters. One ♂, apparently scarcely mature, shows a little buff variation below and very little rufous on the tibial plumes.

193. *Lophotriorchis isidorei* (DES MURS), Rev. Zool., 1845, p. 177. [Santa Fé de Bogota.]

♂ ♀ (?) Mérida, circa 1912 (orig. tickets perished). In immature plumage, head and neck white with darker centers to the feathers; short crest black; entire underparts white, with a few dark brown shaft-lines; tail with 4 black bands, the wide interspaces marked with gray and brown; wing of a female (?) 521 mm.; male (?) 488 mm. Tring Museum possesses three examples in this plumage, one of which has the rufous feathers of adult plumage appearing on side of chest.

238a. *Elanoides forficatus yetapa* BONN. ET VIEILL., Encyc. Meth. iii, p. 1205 (1823). [Paraguay.]

5 ♂, 4 ♀, Culata, Capás, Escorial, April-August, 1906-14, alt. 2500-3500 meters; 1 juv. Correfos, June 19, 1911, alt. 3000 meters.

The adults of this scarcely separable form seem to average a trifle smaller than those of the typical form; wing 373 mm. (smallest male) to 433 mm. (largest female). The juvenile bird appears to be newly fledged, with the tail just growing, the head and hind neck buff, and underparts washed with buff; the plumage otherwise not differing from that of the adult.

246. *Regerhinus uncinatus uncinatus* (TEMME), Pl. Col. i, pl. 103-5 (1824). [Brazil=Rio de Janeiro, apud Chubb, type in Leyden Mus.]

♂ juv., Escorial, October 12, 1911, alt. 3000 meters. ♂ in intermediate plumage, Mérida dist. (ticket perished). The juvenile bird is in very rufous plumage, the secondaries entirely rufous barred with black.

250b. *Elanus axillaris leucurus* (VIEILL.) N. D., XX, p. 563 [err. 566] (1818). [Paraguay.]

♂ Nevada, Nov. 14, 1905, alt. 3000 meters.

252. *Gampsonyx swainsoni meridensis* SWANN, Synop., List Accip., pt. 3, p. 104, January 20, 1920.) [Nevada, Merida dist. Venez. type in coll. H. K. S.]

♂ (type) Nevada, November 15, 1903, alt. 3000 meters.

8 ♂, 1 ♀, Valle 1905-13, alt. 2000-2500 meters.

Three ♂ are younger examples, having the feathers of upper parts edged with rufous, the rufous collar nearly absent and the forehead white, but not otherwise differing from the adults. All examples show the rufous on sides characterising this race although in varying degrees.

Two examples in my collection from Bona Vista and Miritiba, N. E. Brazil are intermediate showing a trace of rufous on the left flank only.

253. *Ictinia plumbea* (GMEL.) S. N. i p. 283 (1788). [ex Lath.-Cayenne.]

- 1 juv. Nebados, Sept. 18, 1912, 3000 meters.  
 Juvenile plumage: slaty black above the head, neck, throat and chest white, streaked with slaty black, the flanks barred with the same.
293. *Falco deiroleucus* TEMM., Pl. Col. i, pl. 348 (1825). [Brazil.]  
 Juv., near Mérida, November, 1911. In the immature plumage described by Sharpe (Cat. Bds. Brit. Mus., p. 403). Wing 289 mm., hence presumably a female.
297. *Falco columbarius columbarius* LINN., S. N., i. p. 90 (1758) ["America", ex. Catesby=Carolina].  
 ♂ Culata, September 18, 1911, alt. 3000 meters.
- 310a. *Cerchneis isabellina ochracea* CORY, Field Mus. Pub. Orn., Ser i. p. 298 (1915). [Colon, Tachira, W. Venez., type in Field Museum.]  
 19 ad. ♂; 1 ad. ♀; 9 juv. 1906-14.  
 One ad. male, with totally unspotted back and lower parts, shows a small rufous crown patch; another practically adult, but with back barred has a larger rufous crown patch.
- 315a. *Pandion haliaetus carolinensis* GMEL., S. N. i. p. 263 (1789) [S. Carolina.]  
 ♀ Culata, March 14, 1908, alt. 2500 meters.  
 ♂ (?) Montanas Sierra, October 24, 1911, alt. 2800 meters.  
 The female, apparently less adult, lacks the narrow paler edgings above which appear in the other bird, and has upper parts, including the center of crown and patch behind eye and a distinct occipital crest, blackish; the tail dark brown with distinct bands of black; the interspaces on all but center pair of feathers white; wing 494 mm.
- 38 Great Queen St., Kingsway, London, W. C. 2, England.

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## DESCRIPTION OF A NEW LOON.

BY LOUIS B. BISHOP M. D.

WHEN I returned from North Dakota in 1895 I was surprised to find that a breeding female Loon I had collected on Turtle Mountain was much smaller than any I had from the East. Later, when I obtained eggs from North Dakota, I found them also smaller than eggs I had collected in New Hampshire. Unsexed Loons, killed by half-breeds on Turtle Mountain also in 1895, and now in the collection of Mr. William H. Hoyt, were likewise very small, as was another breeding female I collected there in July, 1905.



Difficulties arose, however, in determining whether the larger or smaller bird was true *immer*. Brännich, in describing *Colymbus Immer* (Ornithologia Borealis, 1764, p. 38), had evidently a young bird or one in winter plumage, which he said came from the Faroe Islands (E *Færoa*), and gave the range as these islands, Norway and Iceland. Under *Colymbus Torquatus* he describes the adult (page 41), and ascribes it to Iceland, Greenland and Norway. I failed to find skins of this species from any of these localities in any collection to which I had access. Later I obtained an adult male taken in south Greenland on June 2, and adult females taken in south Greenland on May 28 and in Iceland on July 23. Comparison showed at once that the North Dakota birds were much smaller than these.

Then another trouble presented itself. Adult Loons in breeding plumage, for it seemed safer to confine comparison to such birds, are by no means common in collections, and a large part of the existing skins are of undetermined sex. In studying the subject I have examined and measured all the adult Loons of this species in the Museum of Comparative Zoology in Cambridge, the Bangs Collection in that Museum, the American Museum of Natural History in New York, the California Academy of Sciences, the Museum of Vertebrate Zoology at the University of California, the private collections of the late Mr. William Brewster, Dr. Jonathan Dwight, Captain A. Henry Higginson and Mr. William H. Hoyt, and some in the Biological Survey collection in the United States National Museum, and wish to express my thanks to those in charge of these collections for allowing me this privilege.

The measurements of these birds, when tabulated, showed clearly that two races exist. The much larger bird, true *immer*, breeds in Iceland, Greenland, and south along the Atlantic coast of North America to New Hampshire and western New York; west along the Arctic coast to Fort Macpherson, Mackenzie; southwest through Yukon (Forty Mile) to the Kenai Peninsula and Admiralty Island, Alaska. At least birds referable to it have been taken at these places from the latter half of May to August. It winters along the Atlantic coast, south at least to North Carolina, and on the Pacific to Port Townsend, Washington.

Of the smaller race I have examined late spring and summer



adults from Wisconsin, Minnesota, North Dakota (7) and Sicamous, British Columbia. It winters commonly on the coast of California, all the California birds I have examined belonging to it, and north to Oregon. It is rare or accidental in winter on the Atlantic coast from Maine south to Florida.

A male in the Museum of Comparative Zoology (37377) taken in Massachusetts, but without date, an immature female in the collection of Mr. Brewster (4125) taken at Concord, Mass., on April 9, 1875, and a male in the American Museum of Natural History (74967) taken at Matanzas River in August, 1879, plainly belong to the smaller form, as does the young Loon from Maine in the Newell Eddy collection, now in the Museum of Yale University, which has been recorded as *Gavia arctica*. (Knight, Birds of Maine, 1908, p. 27). To this race belong also a female taken on the Colorado River, California, April 4, 1864, in the Museum of Vertebrate Zoology, (6403), and a bird from the Kennerly Expedition in the collection of Dr. Dwight (21982).

The only reference to the existence of two forms of the Common Loon that I have found is in the 'Catalogue of the Birds of New Brunswick,' where Mr. Chamberlain states (Bull. Nat. Hist. Soc. New Brunswick, 1, 1882, p. 63) "Two races of Loon spend the summer in New Brunswick, and breed here. They have plumage of similar colors and markings, but one is smaller than the other, being some six inches less in length." The larger bird he gives as the form breeding abundantly in the interior, not seeking the coast till the rivers freeze over, while the smaller he finds the commoner in the Gulf of Saint Lawrence, but gives no proof that it breeds there. Two of three birds in the collection of Dr. Dwight from Tadousac, Quebec, are intermediate between the two races, and probably the smaller one does occur in the Gulf in fall.

It is a common summer resident of the lakes and ponds on Turtle Mountain, North Dakota. In notes and habits it resembles the larger race.

As the names *immer*, *torquatus* and *glacialis* all apply to the larger race the smaller one may be known as

***Gavia immer elasson*<sup>1</sup> new subspecies**

**Lesser Black-billed Loon<sup>2</sup>**

Type.—Female adult No. 13235 collection of Louis B. Bishop; Carpenter Lake, Rolette County, North Dakota, July 13, 1905; L. B. B., collector.

Subspecific characters.—Smaller than *Gavia immer immer*

Summer range.—The interior of North America from Northern California, North Dakota, northern Iowa and Wisconsin, north to British Columbia, and probably northern Manitoba and northern Ontario.

Winter range.—Chiefly the coast of California, north to Oregon, and south to Lower California; the Gulf of Mexico (?); rarely on the Atlantic coast from Maine to Florida.

Measurements of type.—Length, 743 millimetres; extent, 1327.2; wing, 352; tail, 76.7; exposed culmen, 71.1; depth of bill at base, 21.3; tarsus, 77.5; outer toe with nail, 110.5.

This Loon is a common summer resident of the lakes and larger sloughs on Turtle Mountain. Two eggs in my collection were taken on Fish Lake by Edstrom on June 15, 1902, and we saw downy young at Carpenter Lake on July 13, 1905. It is a common migrant on the prairie lakes, arriving soon after the middle of April (Rock Lake, April 18, 1895; Sweetwater, April 17, 1903, Bowman), and breeds on Devil's Lake, where young a few days old were seen on June 9, 1895, (Bryant), and possibly occasionally at Stump Lake, as two were seen there between June 3 and 10, 1903, (Baily and Hughes), and a single bird on June 17 and 26, 1905, (Eastgate and Bishop).

The diving ability of the downy young we learned at Carpenter Lake July 15, 1905, where two with their parents were seen well toward the center of this deep and almost circular body of water. The day was clear and calm, with no waves to hide the birds. Soon after our boat began to gain on them the old birds dove, coming up far apart, and leaving the young in almost the center of the lake. Then the young dove also, and, though we soon reached the spot where they disappeared, and watched on all sides carefully for a long time, we never caught another glimpse of either.

<sup>1</sup> From the Greek comparative ἐλάσσων meaning "smaller." As a Latin adjective all genders are *elasson*.

<sup>2</sup> That the English name of a bird should be sufficiently definite that no doubt will exist as to what species is meant, when it is used, seems to me very necessary. "Loon" belongs also to all the other members of the genus, "Northern" is a misnomer, and "Common" unsatisfactory. The name "Black-billed" is simple and fairly distinctive, so I offer it as a suggestion.

Measurements of Loons from various localities follow. They are in millimetres, taken with dividers except the wing, which was taken with a steel tape following the natural contour.

## GAVIA IMMER IMMER

	Wing.	Tail.	Exposed Culmen.	Depth of Bill at Base.	Tarsus.	Outer Toe with Nail.
Eight breeding males from Alaska, Greenland, Labrador, Newfoundland, Quebec, Massachusetts and Alexandria Bay, New York.						
Average..	388.3	90.5	84.	26.5	98.3	127.1
Largest...	406.4	101.6	93.7	29.3	99.1	146.1
Smallest..	362.	81.8	73.4	23.1	82.3	117.3
Nine breeding females from Alaska, Yukon, Iceland, Greenland, Labrador and Maine.						
Average..	381.3	90.3	80.6	25.1	91.3	124.
Largest...	392.4	100.1	90.4	28.2	98.6	134.6
Smallest..	349.3	82.	75.	22.4	81.8	113.
Four non-breeding males from Massachusetts, Rhode Island and Connecticut.						
Average..	376.6	88.7	87.5	27.	90.	119.4
Largest...	396.2	96.	95.8	29.4	96.	129.5
Smallest..	363.	85.1	83.6	24.1	81.3	115.1
Six non-breeding females from Connecticut, New York, North Carolina and Washington. (The three from Long Island, New York, taken two in May and one in December, have wings nearer the smaller race, but bills and feet nearer the larger.)						
Average..	361.4	84.2	85.3	25.3	93.9	121.8
Largest...	372.9	89.2	99.1	27.4	100.6	126.
Smallest..	335.3	77.5	75.4	23.6	89.4	116.3
Nine adults of undetermined sex from Mackenzie, Maine, Massachusetts and Sable Island, Nova Scotia.						
Average..	380.2	87.5	87.2	27.4	92.	125.5
Largest...	406.4	100.1	92.5	30.	98.6	135.1
Smallest..	357.	81.5	82.6	24.	83.	110.

## GAVIA IMMER ELASSON

Wing.	Tail.	Exposed Culmen.	Depth of Bill at Base.	Tarsus.	Outer Toe with Nail.
Three breeding males from Minnesota and North Dakota.					
Average.. 354.4	80.4	81.5	23.9	85.5	116.9
Largest... 361.3	86.4	85.2	25.2	91.2	121.1
Smallest.. 342.	74.6	75.	22.3	80.4	111.8
Five breeding females from Wisconsin, North Dakota and Sicamous, British Columbia.					
Average.. 345.7	81.3	73.9	21.8	80.6	109.6
Largest... 359.7	91.3	78.2	22.9	83.6	111.7
Smallest.. 333.3	70.6	68.2	21.2	77.5	106.7
Two breeding birds from North Dakota of undetermined sex.					
339.	81.2	76.3	22.6	88.	111.
357.	97.8	....	22.9	83.7	107.8
Three non-breeding males from the coast of California.					
Average.. 343.	83.5	78.	24.3	91.8	121.4
Largest... 347.	98.8	79.8	24.8	98.6	124.9
Smallest.. 337.	65.3	76.8	23.9	85.3	115.3
Four non-breeding females from the coast of California, and the Colorado River.					
Average.. 337.5	90.5	74.9	22.4	83.2	112.1
Largest... 345.	106.	76.2	23.1	84.7	115.1
Smallest.. 331.	82.8	73.	21.4	80.8	109.6
Three adults of undetermined sex from Oregon and the coast of Califor- nia.					
Average.. 332.3	85.3	72.3	22.7	82.6	114.7
Largest... 351.8	99.5	76.1	23.4	88.7	116.4
Smallest.. 315.	70.5	69.3	21.5	79.	113.8
A not-dated Male and immature Female taken April 9 from Massachusetts, and an unsexed adult taken at Matanzas River, Florida, in August.					
Average.. 346.9	81.3	77.	22.9	86.3	117.5
Largest... 355.6	85.3	77.7	23.6	88.4	120.6
Smallest.. 342.9	76.7	76.2	21.8	83.8	114.3
Length and spread of wings of the two races are as follows, taken in millimeters, from freshly killed birds.					

## GAVIA IMMER IMMER

One Male and three Females from Connecticut, North Carolina and Washington.

	Length	Extent
Average.....	834.9	1435.3
Largest.....	866.6	1479.6
Smallest.....	812.8	1381.6

## GAVIA IMMER ELASSON

Three Males and four Females from North Dakota and California.

Average.....	751.6	1330.1
Largest.....	787.	1371.6
Smallest.....	715.8	1290.6

Measurements of eggs, of the two forms in millimeters are

## GAVIA IMMER IMMER

Four (two sets) from southern New Hampshire.

	Length	Breadth
Average.....	90.7	57.2
Greatest.....	91.7	57.7
Least.....	88.9	53.9

## GAVIA IMMER ELASSON

Six (three sets) from Turtle Mountain, North Dakota.

Average.....	81.	55.1
Greatest.....	82.6	56.9
Least.....	78.8	53.6

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## NOTES ON THE WINTER AND EARLY SPRING BIRDS OF SOUTHEASTERN ARKANSAS.

BY CHRESWELL J. HUNT.

Acre after acre of flooded woodland; a Turkey Buzzard soaring overhead; mud, mud everywhere and a woodpecker on every tree. That is my impression of winter in southeastern Arkansas.

The early part of 1920—January 24 to April 12—was spent in a construction camp in the northeastern corner of Drew County, Ark., living in a tent in the woods and spending all of my time



out-of-doors. During these eleven weeks I inspected the mixing and laying of eight miles of asphalt road which kept me fairly busy, but as this work kept me out-of-doors and as there were days off when the work was held up for one cause or another I managed to explore the locality quite thoroughly. Then too our road was bordered on one side by an interesting cypress bayou and on the other by open cotton fields and was in itself a good place for bird study. As there has been so little published on the birds of Arkansas it seems advisable to place on record what observations I made on the birds of this section. My thanks are due Mr. Benjamin T. Gault of Chicago for much assistance in the preparation and examination of specimens.

The camp was situated along the Missouri Pacific tracks, two miles north of Tillar, Drew County, about fifteen miles west of the Mississippi River, the character of the country being low and flat—land that was, prior to the building of levees along the Mississippi, under water annually during the freshet season. According to Mr. Arthur H. Howell in his '*Birds of Arkansas*'<sup>1</sup> it lies in the lower Austral life zone. East of the camp, in Deshea County, near the river, is a stretch of really wild country where Wild Turkeys are plentiful, deer common and a few black bears and bobcats are still to be found. I should have liked to have explored some of those swamps but as my time was not my own and as the few Missouri Pacific trains always ran the right way at the wrong time, I found it practically impossible to make any extended side trips and had to confine my tramps afield to within walking distance of the camp. In this section the land is mostly owned by large estates, much of which is heavily wooded. The cleared portion is divided into small farms which are rented to negro tenants who plant and raise a crop of cotton. The white owners mostly live in the towns; hence there are few big plantation homes through the country, only the small houses of negro farmers scattered about. In this section "cotton is king" and some corn is grown; but most of the country is covered with a forest of hardwood, largely oak (I identified eight species of oak from the brown leaves underfoot), hickory and elm, white walnut,

<sup>1</sup> *Birds of Arkansas*, by Arthur H. Howell, 1911, Bulletin No. 38, Biological Survey, U. S. Department of Agriculture.

ash, sycamore, red and silver maple are common. Trees characteristic of the locality are the holly, china-berry, pecan, and sweet gum and along the streams the bald cypress and the tupelo gum.

To me it was a land of woodpeckers, especially during January and February, for while there were many other birds about, the woodpeckers, or "Peckerwoods" as they call them in Arkansas, were I believe the most abundant and I know they were the most conspicuous and noisy of them all. The Red-headed and Red-bellied Woodpeckers were my almost constant companions all day long. Practically every tree and fence-post had its "Peckerwood." They were even on the trees beside the dirty asphalt plant with its black smoke and noise. I really wish I could make it plain how abundant Red-headed Woodpeckers were about Tillar. To say they were extremely abundant does not begin to fill the bill. Every Red-head has his own special perch where he sits by the hour, sallying forth now and then after some insect in true flycatcher fashion, and he drives away any other bird that dares come near his favorite tree top. He is a noisy bird too with a variety of calls but is not given to drumming nearly as much as are the Red-bellied, Hairy and Downy.

As I recall those winter woods, with the warm vivid sunlight, there is always a Red-headed Woodpecker somewhere in the picture. Perhaps the immense flocks of Grackles and Rusty Blackbirds, that wandered about, were more of a novelty;—flocks of thousands, drifting through the woods and covering the ground in the half dry spots; but as you tramped through those woods there were ever Red-headed Woodpeckers about you, alighting on the tree trunk at your side, calling from the branches overhead or fluttering down from above like wounded birds, the white patches on their wings resembling scraps of paper blown before a wind. Then too these winter woods were by no means songless. There was the cheery whistle of the Carolina Wren and the Cardinal; White-throated Sparrows sang off and on; Tufted Titmice called, Blue Jays screamed and Mockingbirds scolded. Small flocks of quiet Robins darted about and Bluebirds were frequently seen. The Carolina Chickadee was everywhere and flocks of Goldfinches roamed here and there. Also one came upon an

occasional Phoebe, Hermit Thrush and Brown Thrasher, or a few Ruby-crowned Kinglets or Myrtle Warblers. Out in the open fields the Meadowlarks sang and you flushed coveys of Bobwhites and small flocks of Mourning Doves. Also there were Field, Vesper and Song Sparrows. Shrikes perched on the wire fences and above circled the Turkey Buzzards and Black Vultures or an occasional Red-shouldered Hawk. The absence of Crows was remarkable. I heard one on January 27 but I did not see or hear them again until April 7 when I saw several.

January 31 was warm, the elm trees were budding out and the little cricket frogs were singing all day and night. A Screech Owl was heard calling, which was the only Screech Owl heard in Arkansas.

February 1 the Mockingbird started to sing. By the 5th the red maples were in blossom and on the 8th there was a decided migration of Brown Thrashers and Robins in progress. On the 9th Killdeers were calling and a Red-winged Blackbird sang for the first time.

February 12 I saw the first Fox Sparrow and Sparrow Hawk. The Robins and Bluebirds were more plentiful and noisy than formerly. You now found the Robins scattered about the woods instead of in occasional flocks. Juncos and White-throated Sparrows were singing and Cardinals were to be seen everywhere. The farmers were starting to plow the cotton fields.

February 18 I found a little lake surrounded by a fringe of tall cypress and grown up in the center with a regular cattail marsh. In these southern marshes the brown cattails and marsh grasses of last year are standing just as tall and almost as thick as they were last summer, there being no ice and snow to break them down as happens farther north. From out of this marsh came the "Ka-ka-ka-ka" of Rails or Gallinules and the "Coo-coo-coo" notes of the Pied-billed Grebe. I saw six of the Greebes but nothing of the authors of those other mysterious noises and there was not a boat to be found about the pond.

I went to Little Rock on February 19 and while there visited the State Capitol and called on the Hon. Dick Brundage, Chief Game Warden. The State of Arkansas makes no provision for scientific collecting and they had written me, when I applied

for a permit, that they did not care to grant permits. So I took the matter up in person with the Chief Warden who gave me a special permit. But while the State has such rigid game laws I found that down in the southeastern corner these laws are not enforced and anyone who wants to shoot anything just takes his gun and shoots it.

On February 23 I found violets and spring beauties (*Claytonia*) in blossom and the peach buds were beginning to open. There are none of the cold set-backs to spring in Arkansas that we experience farther north. One day it is winter and you awake the next morning to find that spring has arrived. A flush of new green leaves on the woods; the rich black earth in the newly-plowed fields; a blossoming peach tree with a Mockingbird singing from its midst; that is March in southeastern Arkansas. On the morning of March 1 there was a regular sparrow chorus in the thickets, the Mockingbirds were heard all day long, and Bewick's Wrens were singing. On March 7 there was a decided migration of Swamp Sparrows and Hermit Thrushes in progress and the peach trees were in full bloom.

March 17 there were great numbers of ducks and geese on the lakes over near the Mississippi but I was unable to see this vast congress of migrating water fowl. March 18 Bobwhites were calling and the Judas trees (*Cercis*) were in blossom. In the evening the first bats came out, while the Robins had apparently all gone north.

March 25 the Yellow-throated Vireo arrived. There were great numbers of butterflies about the woods and I noticed the Red Admiral and the big Tiger Swallowtail. In the bayous the turtles were out sunning themselves on every available log. The sassafras trees were in blossom and yellow buttercups studded the railroad banks. A pair of Bluebirds were building a nest. The flowering dogwood was just coming into bloom and the red plumes of the buckeye (*Æsculus*) brightened the woods. The bald cypress was putting out little feathery leaves and the sweet gums were spreading their bright green stars. The young locust leaves were good to look at. Spring beauties covered the ground in places and May apples were in blossom.

The Chimney Swift arrived March 26; the Purple Martin March

29; and on March 31 the Parula Warbler, Solitary Sandpiper, White-eyed Vireo, Cowbird and Chipping Sparrow put in an appearance. Then on April 1 came the Ruby-throated Hummingbird, Blue-gray Gnatcatcher and Red-eyed Vireo. The Scarlet Tanager, Great Crested Flycatcher and Yellow Warbler arrived April 5 and on the 6th the Cerulean Warbler, Black-throated Green Warbler, Black and White Warbler and Wood Pewee reached us. The Summer Tanager arrived April 7 and the Maryland Yellowthroat and Redstart on April 8. To one who has watched the spring arrivals in our northern states there were several surprises in this Mississippi bottom-land migration. Here on April 10 the woods were alive with warblers and yet, save for two Purple Martins, not a swallow had been seen. Also here were Wood Thrushes, Red-eyed Vireos and Scarlet Tanagers but not a Catbird or a House Wren to be found anywhere.

April 11, my last day a-field, the country had much the appearance of mid-May in northern Illinois: the flowering dogwood and the apple trees were in full bloom, the Kentucky Warbler, Warbling Vireo and Prothonotary Warbler arrived, I came upon a clump of blossoming buckeye and darting about it were a full dozen male Ruby-throated Hummingbirds. They would fly at each other uttering a sort of little scolding note. Over the trees above drooped a poison oak vine loaded with its trumpet-like flowers. Never before had I seen so many Hummingbirds at one time and I will make that my last picture of Arkansas; the bright plumes of the Buckeye; the gorgeous yellow and red trumpets of the Poison Oak and a dozen darting Ruby-throats.

LIST OF BIRDS OBSERVED ABOUT TILLAR, ARKANSAS  
January 24—April 12, 1920

1. *Podilymbus podiceps*. PIED-BILLED GREEBE.—Mr. Arthur H. Howell in his 'Birds of Arkansas', calls this a rare breeder. It is said locally to be a common breeder. Six were seen on February 18. It was observed again on March 26 and March 27.

2. *Phalacrocorax auritus auritus*. DOUBLE-CRESTED CORMORANT.—A flock of eight seen flying over March 22.

3. *Anas platyrhynchos*.—MALLARD.—Howell gives the Mallard as an abundant winter resident and says that numbers are found until the middle of April, but makes no mention of its nesting. This duck was seen several times during March and on April 1 a nest was found on an



old cypress stump in the bayou near Winchester. The man who found this nest hatched the ten eggs under a hen. These eggs hatched April 7 and I saw the downy young on April 11—four days old. I also examined the nest, a down-lined hollow in the decayed top of the stump. After examining young Mallard skins I have no doubt that those little ducks were young Mallards.

4. *Querquedula discors*. BLUE-WINGED TEAL.—Two males observed on the Bayou near Winchester, April 11.

5. *Aix sponsa*. WOOD DUCK.—Howell calls this "The commonest of its family in both winter and summer," but gives no nesting records. I observed this bird on February 3 and again on April 3. On April 4 one of the men from the camp found a female Wood Duck taking her brood of thirteen youngsters to the water. They were crossing the railroad tracks when he saw them and he managed to capture ten of the little ducks. The mother tried by faking a broken wing and such stunts to divert his attention from the young birds but finding her efforts fruitless she flew away. He brought the ten little ducks to camp and fixed up a box for them. They were apparently but a day or two old as the egg sack had not yet been absorbed. They were very interesting babies. They kept up an incessant peeping. They had quite a claw on each toe and could climb up the side of a box as quickly as a mouse, using both bill and claws. They could also swim and dive and it was remarkable what a small hole they could squeeze through. Two days later they all died, chilled I believe, and are now in Chicago collections.

6. *Branta canadensis canadensis*. CANADA GOOSE.—Howell states that a few pair remain to breed in the most secluded parts of the Sunken Lands. I observed a small flock in March and am assured by residents that wild geese sometimes nest in this locality.

7. *Ardea herodias herodias*. GREAT BLUE HERON.—This bird was observed on February 8, March 6, March 14, and April 7.

8. *Fulica americana*. COOT.—Several seen February 12 and again seen March 27.

9. *Philohela minor*. WOODCOCK.—A pair observed March 21.

10. *Gallinago delicata*. WILSON'S SNIPE.—Common. Frequently flushed from wet spots while crossing fields.

11. *Helodromas solitarius solitarius*. SOLITARY SANDPIPER.—One of these birds observed March 31 around a small pool in the woods.

12. *Actitis macularia*. SPOTTED SANDPIPER.—Arrived March 17.

13. *Oxyechus vociferus*. KILLDEER.—First noted February 9. Seen frequently after that date.

14. *Colinus virginianus virginianus*. BOBWHITE.—Common. Would flush one or two coveys on every tramp afield.

15. *Meleagris gallopavo silvestris*. WILD TURKEY.—Still said to be common in the wild country near Arkansas City. On March 14 I saw a gunner entering McGehee, Deshea Co., with one he had taken that morn-

ing. They are said to be sold all winter in the McGehee market and are brought in in lots of ten or twelve.

16. *Zenaidura macroura carolinensis*. MOURNING DOVE.—Abundant. During January and February I found them mostly in small flocks about the cotton fields but during March they became generally distributed. Nests found April 3 and April 9, females incubating.

17. *Cathartes aura septentrionalis*. TURKEY VULTURE.—Abundant. Seen everywhere and at all times.

18. *Catharista urubu*. BLACK VULTURE.—Abundant. Perhaps a little less so than the Turkey Buzzard. The two species frequently seen together.

19. *Accipiter velox*. SHARP-SHINNED HAWK.—One observed on April 6.

20. *Accipiter cooperi*. COOPER'S HAWK.—This bird was seen January 25 and again February 24. A pair were found nesting on April 3.

21. *Buteo lineatus lineatus*. RED-SHOULDERED HAWK.—Common about the camp woods. The birds were paired and apparently nesting about April 1 though I discovered no nests.

22. *Falco columbarius columbarius*. PIGEON HAWK.—One observed February 8.

23. *Falco sparverius sparverius*. SPARROW HAWK.—First seen on February 11 but became fairly common after that date.

24. *Strix varia alleni*. FLORIDA BARRED OWL.—Barred Owls were common at all times about the camp woods. Were heard calling day and night. From what Howell says in his report I class them as the southern form though no specimens were taken.

25. *Otus asio* subsp. ?. SCREECH OWL.—One heard calling the evening of January 31 which was the only Screech Owl noted during my stay in Arkansas.

26. *Bubo virginianus virginianus*. GREAT HORNED OWL.—Heard calling February 18, March 11, March 14, and March 23.

27. *Ceryle alcyon alcyon*. BELTED KINGFISHER.—Tolerably common. Known by the negroes as "Fish Hawk."

28. *Dryobates villosus villosus*. HAIRY WOODPECKER.—Hairy Woodpeckers were tolerably common during February and one taken February 3 proved to be *villosus*.

29. *Dryobates villosus auduboni*. SOUTHERN HAIRY WOODPECKER.—After March 1 Hairy Woodpeckers were not nearly so common and I believe all seen were *auduboni*.

30. *Dryobates pubescens pubescens*. SOUTHERN DOWNY WOODPECKER.—The little Downy Woodpecker was common at all times. One male was taken April 3.

31. *Dryobates pubescens medianus*. DOWNY WOODPECKER.—Howell states that this sub-species has only been taken at one locality in the state, Van Buren, where 6 specimens were secured by Mr. G. Dal-

las Hanna between November 29 and January 7. I took a male *medianus* on February 3.

32. *Sphyrapicus varius varius*. YELLOW-BELLIED SAPSUCKER.—Common. Specimens taken February 3 and April 7. On March 17 there was a decided migration of Sapsuckers in progress.

33. *Phloeotomus pileatus pileatus*. PILEATED WOODPECKER.—Known locally as "Lord God" and "Wood God." Said to be common in the cypress swamps. I saw the bird but twice, February 16 and 23.

34. *Melanerpes erthrocephalus*. RED-HEADED WOODPECKER.—Abundant everywhere. I believe the Red-headed Woodpecker or "Peckerwood" as they call it in Arkansas was the most abundant and noisy species seen.

35. *Centurus carolinus*. RED-BELLIED WOODPECKER.—Abundant everywhere; but less so than the former species. A pair taken March 6. A sociable and noisy bird.

36. *Colaptes auratus auratus*. FLICKER.—Common.

37. *Chaetura pelagica*. CHIMNEY SWIFT.—Arrived March 26. Were common April 6.

38. *Archilochus colubris*. RUBY-THROATED HUMMINGBIRD.—Arrived April 1 and were about in numbers April 11. A specimen taken April 11.

39. *Myiarchus crinitus*. CRESTED FLYCATCHER.—Arrived April 5 when two were seen and one taken.

40. *Sayornis phoebe*. PHOEBE.—Tolerably common during January, February, and March, becoming less so about April 1. Were silent before March 6 when I heard the first one calling. Specimen taken April 7.

41. *Myiochanes virens*. WOOD PEWEE.—Arrived April 6 and again heard calling on the 7th. These were the only birds noted.

42. *Cyanocitta cristata cristata*. BLUE JAY.—Abundant. Specimens taken.

43. *Corvus brachyrhynchos brachyrhynchos*. CROW.—I heard one on January 27 and several were seen on April 7. These are my only Arkansas records.

44. *Molothrus ater ater*. COWBIRD.—Arrived March 31 and seen in small numbers during the rest of my stay.

45. *Agelaius phoeniceus phoeniceus*. RED-WINGED BLACKBIRD.—Common.

46. *Sturnella magna* subsp. ? MEADOWLARK.—Common and in song during my entire stay.

47. *Euphagus carolinus*. RUSTY BLACKBIRD.—Abundant. Flocks of hundreds drifting about the woods. One collected March 6.

48. *Quiscalus quiscula aeneus*. BRONZED GRACKLE.—One of the most abundant birds. Flocks of thousands about the woods and flying over toward their roosts at evening. A pair taken March 3.

49. *Passer domesticus domesticus*. ENGLISH SPARROW.—Common in the towns and a few seen about the barns and houses through the country.

50. *Astragalinus tristis tristis*. GOLDFINCH.—Common.

51. *Poocetes gramineus gramineus*. VESPER SPARROW.—A small flock seen on February 8. Also saw an occasional bird but they were not common.

52. *Chondestes grammacus* subsp.? LARK SPARROW.—A single bird seen January 26.

53. *Zonotrichia albicollis*. WHITE-THROATED SPARROW.—Abundant everywhere during my entire stay.

54. *Spizella passerina passerina*. CHIPPING SPARROW.—Arrived March 31. Common during balance of my stay.

55. *Spizella pusilla pusilla*. FIELD SPARROW.—Common in small flocks about the cotton fields. Frequently heard singing after February 23.

56. *Junco hyemalis hyemalis*. SLATE-COLORED JUNCO.—Abundant. In the flooded woods they kept up in the tops of the trees. On April 3 I shot one which I mistook for a warbler. This bird was moving actively about among the new leaves in the top of a tall tree apparently catching insects. They were still about April 11.

57. *Melospiza melodia melodia*. SONG SPARROW.—Tolerably common up to April 3 but not seen after that date. First heard singing February 18.

58. *Melospiza georgiana*. SWAMP SPARROW.—A few seen during February. March 5 there was a decided migration and by March 7 they had become common. They were still about and singing April 11.

59. *Passerella iliaca iliaca*. FOX SPARROW.—This bird was first seen February 12 and on February 23 I saw quite a flock of them.

60. *Pipilo erythrophthalmus erythrophthalmus*. TOWEE.—Common up to February 15 when there was a decided influx of them and after that date an abundant species.

61. *Cardinalis cardinalis cardinalis*. CARDINAL.—One of the most abundant birds and heard singing at all times. Two specimens taken. Two nests found April 8 with females incubating three and four eggs.

62. *Piranga erythromelas*. SCARLET TANAGER.—Arrived April 5. Two specimens were taken April 6.

63. *Piranga rubra rubra*. SUMMER TANAGER.—Arrived April 7 and first heard singing about the camp. Two specimens taken.

64. *Progne subis subis*. PURPLE MARTIN.—Arrived March 29. Seen again on March 30. I saw only these two birds and they were the only swallows seen in Arkansas.

65. *Bombycilla cedrorum*. CEDAR WAXWING.—A flock of eight seen April 7 one of which was collected.

66. *Lanius ludovicianus migrans*. MIGRANT SHRIKE.—Shrikes were common throughout my stay. Specimen taken March 31.

67. *Vireosylva olivacea*. RED-EYED VIREO.—Arrived April 1. Specimen taken April 5 at which time they were common and singing everywhere.

68. *Vireosylva gilva gilva*. WARBLING VIREO.—Howell says: "The only record of the species in Arkansas is from Helena where it is reported by Mrs. Stephenson as a common summer resident." I saw and heard one singing near Winchester April 11.

69. *Lanivireo flavifrons*. YELLOW-THROATED VIREO.—Arrived March 25 and specimen taken on that date. A common species from then on.

70. *Vireo griseus griseus*. WHITE-EYED VIREO.—Arrived March 31. Specimen taken April 1. Tolerably common after April 1.

71. *Mniotilta varia*. BLACK AND WHITE WARBLER.—Arrived April 6 but heard only once after that date.

72. *Protonotaria citrea*. PROTHONOTARY WARBLER.—First seen near Winchester April 11.

73. *Compsothlypis americana ramalinae*. WESTERN PARULA WARBLER.—Arrived March 31. Three specimens taken.

74. *Dendroica aestiva aestiva*. YELLOW WARBLER.—Arrived April 5. Seen only once.

75. *Dendroica coronata*. MYRTLE WARBLER.—A tolerably common winter resident. On March 7 there was a decided migration. Specimens taken March 25 and April 5. They were still about April 11.

76. *Dendroica cerulea*. CERULEAN WARBLER.—Arrived April 6. One taken April 8.

77. *Dendroica virens*. BLACK-THROATED GREEN WARBLER.—Arrived April 6. Two males taken both in winter plumage.

78. *Oporornis formosus*. KENTUCKY WARBLER.—One heard singing April 11.

79. *Geothlypis trichas trichas*. MARYLAND YELLOW-THROAT.—Arrived April 8 and became common April 9.

80. *Wilsonia citrina*. HOODED WARBLER.—Arrived April 5.

81. *Setophaga ruticilla*. REDSTART.—Arrived April 8.

82. *Anthus rubescens*. PIPIT.—A single bird flushed from a cotton field February 5 and a flock of twenty seen south of McGehee, Deshea Co., on March 14. These may have been *spraguei*.

83. *Mimus polyglottos polyglottos*. MOCKINGBIRD.—Abundant everywhere—in the woods; about the houses and gardens; on the fences along the roadside and in the road itself. First heard singing February 2. I found two completed nests April 7 but no eggs had been laid up to April 11.

84. *Toxostoma rufum*. BROWN THRASHER.—An occasional bird seen up to February 8 when they became common and remained so until April 1 when the bulk seemed to have moved north. A few birds were still about April 11 when I left. It seemed remarkable that I never heard a Brown Thrasher sing in Arkansas. In southern Louisiana, in 1918, I frequently heard them sing during February.



85. *Thryothorus ludovicianus ludovicianus*. CAROLINA WREN.—Common and singing at all times. A specimen taken March 5.

86. *Thryomanes bewicki bewicki*. BEWICK'S WREN.—Arrived February 25 and one collected on that date. Was heard singing and was seen at various localities during March but none were noted after April 1.

87. *Troglodytes aëdon aëdon*. HOUSE WREN.—I observed one bird exploring an old fence February 18. Howell gives but one winter record for the state.

88. *Nannus hiemalis hiemalis*. WINTER WREN.—One taken February 25. This was the only bird seen.

89. *Certhia familiaris americana*. BROWN CREEPER.—One seen February 10. March 25 they became common for a few days. Not seen after April 4.

90. *Sitta carolinensis carolinensis*. WHITE-BREASTED NUTHATCH.—A tolerably common bird. Seen at numerous localities during my entire stay.

91. *Baeolophus bicolor*. TUFTED TITMOUSE.—One of the most abundant birds. Its cheery whistle heard everywhere.

92. *Pantheustes carolinensis carolinensis*. CAROLINA CHICKADEE.—Abundant.

93. *Regulus calendula calendula*. RUBY-CROWNED KINGLET.—An occasional kinglet seen during January and February. February 15 they became much more common and were about in numbers and singing when I left Arkansas April 12.

94. *Polioptila caerulea caerulea*. BLUE-GRAY GNATCATCHER.—First seen and specimen taken April 1. Were common April 7.

95. *Hylocichla mustelina*. WOOD THRUSH.—Arrived April 3. Were common and singing April 11.

96. *Hylocichla guttata pallasii*. HERMIT THRUSH.—About in small numbers during January and February. March 7 they became common. Not noted after April 1.

97. *Planesticus migratorius migratorius*. ROBIN.—Common; roaming about in silent flocks through the winter woods. A migration took place February 8 and after that date they became abundant and noisy and generally distributed. March 18 they had apparently all departed north except one bird that continued to stay about the camp and was still there when I left April 12.

98. *Sialia sialis sialis*. BLUEBIRD.—Common during my entire stay. A pair were building a nest in an old stub March 25.

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THE MOCKINGBIRD IN THE BOSTON REGION AND  
IN NEW ENGLAND AND CANADA.BY HORACE W. WRIGHT.<sup>1</sup>

The purpose of this paper is to review recorded occurrences of the Mockingbird (*Mimus polyglottos polyglottos*) in New England from the earliest records to the present time and to indicate thereby a definite increase in its representation during the period covered, especially in more recent years. In Samuel's 'Birds of New England,' 1883, p. 168, originally published in 1867, it is stated of the Mockingbird, "This bird is so exceedingly rare in New England that it can scarcely be regarded otherwise than as an accidental visitor; and Massachusetts is certainly its northern limit." In a 'Key to North American Birds' by Elliott Coues, fifth edition, 1903, originally published in 1872, the range of the species is given as "The United States from Atlantic to Pacific, southerly; rarely north to New England, and not common north of 38°; though known to reach 42°". In 'A History of North American Birds' by Baird, Brewer, and Ridgway, 1905, originally published in 1874, it is stated, "The Mockingbird is distributed on the Atlantic coast from Massachusetts to Florida. It is by no means a common bird in New England, but instances of its breeding as far as Springfield, Mass., are of constant (?) occurrence, and a single individual was seen by Mr. Boardman near Calais, Maine." Minot in his 'Land Birds and Game Birds of New England,' 1876, states, "A very rare or almost accidental summer visitor to Southern New England." Mr. William Brewster in the revised edition of the work, 1895, states in a qualifying footnote to *Mimus polyglottos*, "A local and very uncommon, but probably quite regular summer resident of southern New England, seen oftenest on or near the coast. One or two specimens have been taken in

<sup>1</sup> This paper was completed by its author at the very time of his death, in June 1920. As a comprehensive and detailed review of the status of the Mockingbird at the northeastern bounds of its range, it is of special interest, but since in its original form it seemed rather too long for a general article in the already overcrowded pages of 'The Auk', it has been somewhat shortened by condensing the review of published records, to which the reader may be referred for fuller details if desired, and by omitting here and there certain less relevant passages. Otherwise it is substantially as it was left by its author—G. M. Allen.

Massachusetts in winter." Mr. Brewster in his 'Birds of the Cambridge Region,' 1906, characterizes the Mockingbird as a "rare transient visitor in spring and autumn and very rare summer resident." The review will show, I think, that there has been in the last twenty years a notable increase of occurrence of winter resident birds extending even into Maine, as compared with the characterization of the Mockingbird by Mr. Brewster in 1906 as "a rare transie it visitor in spring and autumn," without mentioning winter residence, and by his footnote in 1895 stating, "One or two specimens have been taken in Massachusetts in winter," and that this increase in the northern limit of range of winter resident birds points to an increasing permanent residence of the Mockingbird in New England.

#### THE BOSTON REGION.

My own experience with the Mockingbird as a wild bird in the region of Boston dates from 1902, in which year one (1)<sup>1</sup> was observed on October 16 in a cemetery in Melrose. In 1903, a Mockingbird (2) was first seen in Landen's Lane in the Jamaica Plain district of Boston on February 26 and 27. This bird, presumably the same, moved into the Arnold Arboretum, in close proximity to the lane, in early March, and on April 21 was heard singing. In December of this year a Mockingbird (3) was seen at East Point in Nahant on the 28th day, and upon another trip there on January 30, a month later, was again observed in the same locality. This location was much exposed to winds from the ocean, and yet there was shrubbery enough to afford sufficient cover, apparently, to attract the bird to the spot. On the December date the record shows the temperature to have been almost stationery at 16° during the middle of the day, with fresh northwest winds. On the January date the minimum was 18° but on previous days of the month there had been minima of 5°, minus 1°, zero, and minus 6°, as Boston records of temperature. The mercury would certainly have fallen several degrees lower than these figures at Nahant, where the Mocker was wintering.

In 1904, a Mockingbird (4) was again seen in the Arboretum

<sup>1</sup> The figures in parentheses denote the succession of individuals observed.

on January 12, and on this date only. In the same year one (5) was observed in the park beside Jamaica Pond on January 6, 7, 13, 23, and February 1, and then was lost to our ken, but Messrs. F. G. and M. C. Blake recorded this bird as late as April 6. In December in the same locality, where had been Francis Parkman's suburban residence and rose garden in earlier years, a Mocker again appeared and was observed on the 19th and 23d of this month, and on January 2 following was seen on the Charles Sargent estate adjoining. Perhaps, these were different individuals, but they occupied so precisely the same portion of the park that it seems not improbably that the two occurrences should be regarded as those of the same individual. In both instances the bird was strictly a winter visitor, and, so far as my observation extended, sought other locations after January 2 and April 6 respectively. My weather record for the entire month of January 1904 is, "very cold and stormy; snowfall of the month thirty-six inches; sleighing uninterrupted." At the close of this year, namely, on December 23 and 26, again a Mockingbird (6) appeared in the Arboretum and became essentially a 1905 bird, for it continued to be observed on January 2, 16, 18, 24, February 2, 10, 22, and March 2, 7, 22, 31, after which it was no more recorded. On the later March dates no song had been heard. On February 2, however, the bird was in quite close proximity to a Northern Shrike, and both birds gave musical calls and whistles, the Shrike voicing itself rather the more variedly on this occasion. The record is that the two birds were within a hundred feet of each other on their respective perches in front of the administration building. Mr. Charles E. Faxon, whose fine, artistic work in illustrating Professor Sargent's 'The Silva of North America,' was done within this building, told me he had been puzzled over the identity of these two birds, for at one time he would see a Shrike and at another time a Mockingbird, but had failed to see both at the same time and clear up the mystery. Once more in December of this year a Mocker (7) appeared in the southerly section of the Sargent estate, near Jamaica Pond and was recorded on the 27th day, and once later on January 30, 1906, after which date the bird was not again seen.

Also in January, 1906, again a Mockingbird (8) was seen in Nahant on the 19th day, this occurrence being near the centre of

the town, where the peninsula is much wider than at East Point and there are more sheltered spots. No other individuals than these two January birds were recorded in 1906. Mrs. Edmund Bridge had observed this bird on December 20 preceding. No individuals appeared in the late autumn or early winter of this year in places which had now come to be associated with the Mockingbird as its winter haunts, namely, the Arboretum, and the park about Jamaica Pond and its immediate vicinity.

The year 1907 opened in the same way with no records of a Mocker in January, February or March. But in the fall, on November 8, one (9) was seen in the Fresh Pond Reservation, perching in shrubbery on the west side, while below on the ground an early Tree Sparrow was feeding. This bird was not again seen upon subsequent visits to the reservation.

During the entire winter of 1907-8, a Mockingbird (10) in West Medford was under observation by Mrs. Edmund Bridge. By her kindness I saw this bird on February 10. Mrs. Bridge states in 'The Auk,'<sup>1</sup> "From November 17, 1907, until April 20, 1908, we had a Mockingbird on our place the greater part of each day, with few exceptions, feeding on suet, barberries, and cedar berries. The bird, presumably a female, as it did not sing, scolded and drove away the Shrike, Jays, Cedarbirds, and Robins."

This was a winter when, according to my records, "Birds are very scarce. Land-birds are very noticeably absent, or present in the smallest numbers. Water-birds are also in diminished numbers, scarcely a species being as abundant as usual. Yet we have the White-winged Gulls in unusual number at the Lynne and Swampscot beaches and elsewhere, at least six Iceland, several Glaucous, and a Kumlien's." On the whole it was a rather mild winter with only five near-zero mornings occurring at the end of January and in early February.

In February, 1908, on a visit to Franklin Park on the 18th a Mockingbird (11) was observed there. And in April visits to the Park, two individuals (11, 12) were seen on the 14th and 22d. On the former date both birds were silent at the time of my visit, but on the latter date the two were seen several times together for a

<sup>1</sup> Auk, XXV, 1908, p. 320.



moment during a stay of one and one half hours, and while one of the two was silent, the other sang freely, mocking very distinctly fifteen of our common species. The record gives these mockings as the Bluebird's mellow notes, the Blue Jay's whistles and calls, the Flicker's flicking notes, the Brown Thrasher's song, the Catbird's calls and song, the Chickadee's *dee-dee-dee-dee*, the Purple Finch's call, the White-breasted Nuthatch's song, the Sparrow Hawk's "killy killy," the Northern Shrike's whistles and calls, the Red-winged Blackbird's whistles, the Phoebe's song, the Robin's song and cackles, the Crow's spring notes, and the Song Sparrow's song. This was my first experience in falling in with a good mocker. His performance was given mostly between 9 and 10 A. M. On April 25 this bird was again found singing in the same locality and added the Towhee's call to his repertoire previously heard. The second bird did not appear.

On April 11, 1909, Mr. Richard M. Marble informed me he observed a Mockingbird (13) in Franklin Park, further record of which was not obtained. In the late autumn once again a Mocker (14) was present in the Arboretum and was observed on November 13 and 22, singing freely on both of these dates, and was also seen on December 4, 14, 20, and January 31 following, when he was naturally silent. And when the spring of 1910 had come and on April 6 I visited the Arboretum, this bird undoubtedly the same, was again in song, and on the following day two individuals (14, 15) were present and both singing. As neither of these birds did any mocking, but sang only their own song, it may be assumed, perhaps, that they were young males and inexperienced songsters, although not necessarily so, since it is testified of Mocking birds in the South that it is not unusual to find a male who is not a mocker, or is a mocker to a very limited extent. One of these singing males continued under observation to the end of April, but the other dropped out of notice at once.

In this year, 1910, two individuals (16, 17), quite widely separated, were present in Franklin Park and seen on January 12. I record that one of these birds was "calling loudly and incessantly" for a time and that "I had not before heard this sharp call from any of the Mockingbirds hitherto met with, which have invariably been silent during the winter season."

When December came, as had been not unusual in our experience, a Mockingbird (18) appeared in Olmsted Park by Leverett Pond and was seen on the 13th day by Mr. Barron Brainerd and on the 17th by Mrs. Bridge. Frequent walks through the park during the early months of the year following revealed this bird there throughout January, February, March, and April to the 17th day. On March 10 the bird had begun to sing and continued to be heard in song to the day of final record. On March 29, he mocked several common species, and on April 8, he gave a fuller performance, mimicking at least fifteen species, including Blue Jay, Bluebird, Robin, Phoebe, Goldfinch, Sparrow Hawk, Chickadee, Brown Thrasher, Catbird, Northern Shrike, Ruby-crowned Kinglet, Crested Flycatcher, Downy Woodpecker, Flicker, and Bobolink. When the walk was taken on April 20, no Mockingbird was heard or seen, nor upon subsequent days.

In this year, 1911, in Riverway Park, near Longwood Avenue, a Mockingbird (19) was observed on February 9, 17, 23, March 1 and 7. And on March 13 and 17 two individuals (19, 20) were present in this park, one in song and the other silent, thus suggesting a female, and, perhaps, a pair. These birds continued to be under observation, one or both during the remainder of March and up to April 8 inclusive, beyond which date neither was in evidence. One bird continued a songster without mimickings, and the other bird was not heard in song. Mr. E. E. Caduc informed me that on March 19 he saw still another individual (21) in this park, passing three Mockingbirds successively according to his careful and discerning observation, and the bird located by Leverett Pond constituting a fourth in less than a mile of the parkway bordering Muddy River on the Brookline side.

When the fall of 1911 came, again a Mockingbird (22) was present in this park and was recorded on October 12, November 19, 28, December 25, and January 18 the year following. And in Olmsted Park by Leverett Pond a Mocker (23) again wintered with many records of observation from December 24 through January, February, and March, to April 3, 1912. On March 9 and 14 this bird softly sang the song of the species only, without mocking, within the shrubbery at the very entrance to the park at Huntington Avenue, while the bird of the previous year, which

had also spent the entire winter and early spring farther up in the park, had sung exclusively as a mocker. The same winter a third Mockingbird (24) was under observation at Chestnut Hill Reservoir with records from January 18 to April 4. This bird was not heard in song and was assumed to be a female.

Once more, when the fall of 1912 came, a Mockingbird (25) was seen in Olmsted Park by Leverett Pond, being first noted on October 18 and repeatedly seen afterward through the winter and early spring to April 13, 1913. In October and on November 3 and 14, and again in March on the 16th day and in April this bird was in song, executing, however, few distinguishable mimickings. After the date named in April it was not in evidence throughout the later spring and summer, but re-appeared in the same locality and on nearly the same day, presumably the same bird, in October, and was first recorded on the 19th day, when he was in song, and again on the 30th day, when he sang very beautifully, so that I record him as "The first singer of all the individuals which I have heard in the succession of years. There were no harsh notes, and there were few pauses in his song, and much variety, surpassing other winter examples which I have heard." He was still in song on November 17, and he remained in his chosen location and was recorded in December, and in January, February, March and April, 1914, being heard in song on March 29 and up to April 10, after which no records were obtained, and there was an apparent summer absence. But in October a Mockingbird was again in evidence in this locality, first recorded on the 19th day, and on November 25 as still in song and occupying the same oak as did the bird of the previous year, therefore seeming to be the same individual returned to former winter quarters. But in subsequent walks through this park no Mockingbird was seen, and this bird, presuming it to be the same individual, disappeared from our ken after three successive appearances in successive Octobers, the first two of which were followed with full winter residence continuing into the month of April, the 13th and 10th days respectively.

In the spring of 1915, on March 26, a Mockingbird (26) again was recorded in Riverway Park, scolding sharply as Bronzed Grackles flew into the shrubbery which it occupied. On April 12,

this bird was again seen, and on May 14 was still present and singing. In the autumn once more an individual (27) appeared in Olmsted Park beside Leverett Pond, being first recorded on October 8, when it "gave some very clear, beautiful whistles." On November 11 it was still in song and produced several mimickings. This bird was recorded also in December, January, and February of the winter of 1915-16, but not after February 10. On that day it had wandered beyond the confines of the park, and was found calling sharply and constantly on the premises of a residence on Allerton St., and, perhaps, following the neighborhood through, found a favorable spot of its choice beyond the confines of the park.

In our enumeration of Mockingbirds observed in the region of Boston, mostly within its precincts, we come now to one whose permanence of residence and powers of mimicry far surpass the record of any of the before mentioned birds. On January 10, 1915, this Mockingbird (28) was first seen in the Arboretum, the observation of which has continued with but temporary interruptions to the present time. Mr. Charles E. Clarke 'phones me to-day, while I have been engaged on this paper, that yesterday, January 26, 1920, he saw this Mockingbird still in the Arboretum, having wandered up the side of Bussey Hill from the shrub garden, its usual haunt. Unlike all the other individuals which have been enumerated this bird has summered and wintered there for five years, and has now entered upon the sixth year of his residence. In no one of the seasons has there been any evidence that he has had a mate, or that there has been a nesting of the species. Yet this bird has been a most joyous singer throughout all the regular seasons of song, both spring, summer, and fall, year by year, and has shown no disposition to wander elsewhere from any spirit of discontent or restlessness to find a mate. He has become a fixed permanent resident, braving all the rigors of severe winters and luxuriating in all the spring, summer, and autumn efflorescence and fruitage of this richly stocked park, in which are grown all the trees and shrubs which can be cultivated by a high order of intelligence in this climatic zone. Our resident Mockingbird has chosen the section known as the shrub garden for his haunt. A profusion of berries is here matured season by season for winter food, and thickly branching shrubs afford shelter from cold searching winds.

As evidence of the hardiness of this particular bird, it may be stated that he went safely through the winter of 1917-18, when there was a temperature on one morning of eighteen degrees below zero Fahrenheit, with below zero registration of four to ten degrees on four other consecutive mornings, December 29 to January 2 inclusive. I asked the superintendent of the grounds if he knew of any assistance being rendered the Mocker in this extraordinary test of its endurance, and he replied that he knew of none. This Mocker, self-reliant and unaided, braved all this severity, and again very low temperatures, later in January, and a cold wave in February, which once more sent the mercury down to a dozen degrees below zero. On March 23 he had begun to sing, perhaps, some days earlier. The only period of the year when this Mockingbird has passed from observation has been in August and September, when having completed his spring and summer singing he has probably gone into retirement for the annual moult. Again, in October, year by year, he has come back into evidence and into song, the song period lasting to the middle of November. From that time to the middle of March or thereabouts the bird has remained out of song, a winter period of four months. Mr. Charles E. Faxon informed me that in my absence in the summer of 1915, it sang up to July 27, Mr. Van Der Voet, superintendent of the grounds, and happily maintaining an eye and ear open to the birds therein, testifies similarly, that this bird sings well into July and then passes out of notice for a time, but re-appears in October. Not unlikely his seeming disappearance is due in part at least to his silence and the removal of one very emphatic evidence of his presence. The eye remains then, as the only sense for detecting him, and as it is the season of dense foliage, it may well be that in his quiet movements and shy estate due to molting he remains undetected among the shrubbery.

This Mockingbird's repertoire is very extensive. It has increased since the first season of his singing. He has developed into a mocker exclusively, not seeming to sing at all the song of the species. The mimickings succeed one another in such rapid succession that one hardly has time to name one to himself before it is succeeded by another. But if the listener remains an hour or longer with him, there is usually a return to some of his rarer



mockings, and so opportunities for renewed interpretations recur and more certain identifications of his rarer voicings can be secured. I have had many interesting experiences in listening to the performances of this bird. One can approach very near to him while he is thus engaged in singing, indeed, almost to the very tree or shrub on which he is perching. And he varies the perches of his choice somewhat, but has a few definitely chosen ones. Some are within the quietude of the shrub garden and some are beside the Arborway drive bordering the grounds outside, where there is a constant movement of motor vehicles in close proximity to him. In the spring seasons of 1918 and 1919 he made choice rather more frequently of this outside location, where it became necessary for the listener to make quite close approach in order to hear distinctly his voicings. He seemed to like the constantly varying companionship of the passing cars with their occupants, who, however, knew nothing of the Mocker's presence in their rapid passing by. Here on the slope of a ridge of extended length, covered largely with oaks and planted with berry-bearing shrubs along the roadway, he has given very full renderings of his remarkably varied repertoire. For instance, on May 6, 1918, he was inspired by a temperature which rose to 88° to especial responsiveness and gave mimickings of twenty-four different species in an hour or so. These were Brown Thrasher's song, Bluebird's song, White-breasted Nuthatch's call and song, Phoebe's song, Robin's song and cackle, Blue Jay in all its various voicings, Bob-White's "scattered" call, Sparrow Hawk's "killy-killy," Flicker's song and "flicking," Barn Swallow's song, Chickadee's "phebe" and "dee-dee-dee-dee", Catbird's call and song, Baltimore Oriole's song and chatter, Yellow-throated Vireo's song, Kingbird's song, Towhee's song and call, Yellow Warbler's song, Canary's song, Rose-breasted Grosbeak's song, Ruby-crowned Kinglet's call and song, Red-Shouldered Hawk's call (given separately from his Blue Jay's mimickings), Red-eyed Vireo's song, Scarlet Tanager's song and call, Cardinal's song. The combinations and variations seem endless, so quickly does he pass from one phase of song to another with various calls interspersed. Such singing may not be regarded as the highest type of bird music, but it certainly displays very wonderful powers of mimicry and self training.

On May 11, five days later, twenty-one different mockings were recorded, including seventeen of those heard on the previous occasion and four others, namely Mourning Dove's "coo," Meadow-lark's call and rattle, Song Sparrow's song, and Warbling Vireo's song. To these were added on May 20 the Red-winged Blackbird's several calls.

In the spring of 1919, this Mockingbird had acquired a still wider repertoire. He was found singing as early as March 15, a day of temperature range from 23° to 35°, but with fair skies and warm sun. He was further heard on March 26 and April 7 and 14 having added to the number of his mimickings, the Northern Shrike's whistle. And on April 23, he had regained his full powers, and twenty-nine distinct mockings were recorded. In addition to eighteen of those already mentioned were eleven others, namely, Kingfisher's rattle, Chipping Sparrow's trill, Field Sparrow's song, Tree-Swallow's song, Cliff Swallow's call, Carolina Wren's song, Crested Flycatcher's challenging call, Nighthawk's call, Oven-bird's "teacher" song, Cuckoo's call, and even Bantam Fowl's barnyard voicings. On May 10 there were further recorded Downy Woodpecker's song or long call and the Whip-poor-will's song. He was also heard to imitate the frog's guttural roll and the fall cricket's chirp. In the autumn also, after his period of obscurity, this Mockingbird has a season of free singing. In 1918, on October 15, I listened to much varied mocking and recorded twenty-one clearly defined mimickings. These included his more usual voicings and to these were added, as imitations, not previously recorded, the House Sparrow's calls. On October 28, thirteen days later, a still more varied singing was noted, when twenty-six different mimickings were clearly identified. These included, besides twenty-two mockings already recorded, five new ones, namely, the Starling's calls, the Hairy Woodpecker's rattle call, the Crow's call and the Olive-backed Thrush's "pip" and querulous calls. On October 30 the repertoire was equally varied with twenty-six different mockings including the calls of Olive-backed Thrush, the songs of Warbling and Red-eyed Vireo, of Ruby-Crowned Kinglet and Tree Swallow. To these were added the call of the Bronzed Grackle. The day was very summery, with a range of temperature from 67° to 78°

wind southwest. On November 7, a week later, the diversity of the mockings had not lessened, and the bird seemed still as fully in the spirit of song as in the previous winter, or as in the days of spring. The House Wren's song was heard and the White-eyed Vireo's song. By November 13, however, he was evidently losing much of this spirit of song, as only brief snatches of melody were heard, and on the 19th I found him silent. In the fall of 1919 he sang up to November 18. It may be stated, therefore, that this Mockingbird's season of fall singing has ended by the 20th of November, but has extended to about that date. At this time he is the only dependable singer among the birds, and his voice is, therefore, appraised high.

I have enumerated fifty-one species of birds which this Mockingbird of the Arboretum has been heard to imitate. The songs or calls of many of these are unfailingly interwoven in his singing and recur frequently. Others are quite often heard, but may fail to gain expression during an hour's visit with the bird. Still others are but rarely given, seldom gaining utterance, and have been heard but few times. What this Mocker may have achieved in other hours than those I have spent with him must remain unrecorded. It may well be that in my many visits with him I may not have heard all the mimickings of which he is capable and which he may have actually given. But the testimony here offered is sufficient to mark him a most extraordinary mocker, excelling, perhaps, in this power all other Mockingbirds whose repertoires have been recorded, so far as my reading has extended. I wonder if his life alone, without a mate or other individuals of his species can have contributed in any measure to this development of his voice, tending to throw him entirely upon his own resources for satisfaction and pleasure. If so, he is a most philosophical bird and merits admiration for his resourcefulness as well as his great achievements. Like most Mockingbirds he can be bold and aggressive toward other birds which come in his way and dart at them and chase them fearlessly, if they annoy him. He can also scold loudly with sharp chirps when disturbed, offended, or alarmed.

Mr. S. Waldo Bailey of Newburyport has recorded another remarkable instance<sup>1</sup> of power of mimicry in the case of a Mocking-

<sup>1</sup> Auk XXVIII, July, 1911, p. 372.

bird heard by him in early June, 1908, and which remained in his locality nearly a week, when he recognized twenty-nine distinct imitations, a list of which he gives. These include six which I have not heard from the Arboretum bird, namely, Least Flycatcher, Wood Pewee, Vesper Sparrow, Indigo Bunting, Maryland Yellowthroat and Wood Thrush.

This Arboretum Mockingbird passed safely through the winter of 1919-1920, which has gone on record as, perhaps, the severest winter within forty years in its depth of snow and repeated low temperatures, the snow packed so hard to a depth of two feet or more that no attempt was made to open up the grounds and they were trackless for weeks as regards vehicular travel. But the Mockingbird secured its food and necessary shelter notwithstanding, while scarcely a person on foot entered the grounds and for the time being there were no bird observers to determine whether the Mocker was safely weathering it. But some mild days had brought spring-like conditions in late March, and when the Arboretum was visited on the 25th day, the Mockingbird was seen in his accustomed spring and summer haunt, not in song, but silent while we remained. We learned that he had first been seen by Mr. Van der Voet on the day preceding and was then still in his adopted winter haunt. On March 28, a visitor heard him mocking. He is now upon his sixth year of residence in the Arboretum. But it proved that he remained in evidence in April to a far less degree than in previous years, and instead of being an almost constant singer was heard to sing but infrequently. I am given records of his singing as heard by Mr. Charles Schweinfurth of the Bussey Institution, in the Arboretum grounds, on a morning in early April, in the lower branches of an English elm just east of the Institute building; again heard on May 1 in shrubbery bordering the drive by the small ponds; once again on May 3, about 5.15 P. M., when "the Mocker was in splendid form in the forsythias on the slope of Bussey Hill." Mr. Schweinfurth further states, "It was on Tuesday, May 4, as I was walking through the Arboretum in the early evening with a friend that we watched this bird singing beautifully and imitating several species on the road going from the Centre Street entrance toward Hemlock Hill.

He was perched in the top of a leafless, young tree, and we watched him and listened to him several minutes."

In my own visits to the Arboretum on April 24 and 29 the bird was seen, but not heard to sing, and on May 6, 12, and 17 he could not be found. I was informed on the last named date by the superintendent, Mr. Van der Voet, that an observer had told him that he had seen a second Mockingbird present a few days previous, speaking with assurance of the fact. Since this five-year resident Mockingbird is no longer seen or heard within the grounds, it may be surmised that we have the explanation in this alleged appearance of a second bird presumably a female, with which the long resident Mocker has mated and gone elsewhere for a nesting. If so, it may prove to be a happy occurrence, should progeny be reared to increase the representation of northern bred and resident Mockingbirds, some of which progeny may inherit the father's remarkable powers of mimicry.

Four other individuals should be enumerated to make the local list more nearly complete. Mrs. Edmund Bridge reported to me a Mockingbird (29) seen by her in West Medford on December 28, 1916. At Wellesley Farms I saw a Mocker (30) on May 11, 1917. Mr. E. E. Caduc informed me that on May 7, 1918, he found a second Mockingbird (31) singing in the Arboretum, this bird being in the same portion of the grounds as the permanent resident Mocker and that both birds were heard in song between four and six o'clock in the afternoon. This bird evidently was a migrant, as it was not further recorded. In the Fresh Pond Reservation, Cambridge, a Mockingbird (32) was seen on November 1 and December 11, 1918, and again on January 15, 1919. On the first named date it was quietly singing without apparent mockings. On the next date the bird was giving his sharp calls, and on the last occasion was silent.

In the Riverway and Olmsted Parks where individuals were present successively in the years, 1910 to 1916 inclusive, one, two, or three birds as winter residents; I have no knowledge of any individual having been seen in the last three years. That period covers their largest representation in Boston's parks, during which fifteen of the Mockers enumerated were seen. This may be due in part to the very regrettable pruning and thinning of the shrub-



bery throughout the extent of these parks, so that no close grouping has been kept and individual shrubs have been reduced to almost skeletons of their former selves. The consequence has been that fewer winter birds have remained, like the Song Sparrow and the White-throated Sparrow, and there has been an entire absence of the Mockingbird. The same injudicious treatment has been applied to the Public Garden with similar results as affecting ground feeding birds which seek covert in shrubbery. As records of the Mockingbird in the region of Greater Boston have been scattered along in years past, perhaps no sure experience can be drawn as to whether the species has been gaining a stronger foothold locally in recent years. But since Mr. Henry D. Minot in his 'Land Birds and Game Birds of New England,' published in 1876, characterized the Mockingbird as "a very rare or almost accidental summer visitor to southern New England," which statement Mr. Brewster in the revised edition, published in 1895, in a footnote as editor, qualified to the extent of characterizing it as "a local and very uncommon, but probably quite regular summer resident of southern New England, seen oftenest on or near the coast, one or two specimens have been taken in Massachusetts in winter," we may fairly regard the species as having had an essential increase in its representation in the Greater Boston Region, and increase in the period of twenty years between the two editors of the above named publication, and a further increase in the twenty-five year period since Mr. Brewster penned his footnote. That it should be with us as a winter resident rather than as a summer resident is the strange fact. For the winter resident Mockers appearing in the autumn or early winter are seldom known to remain in evidence beyond April, and the nestings of the species which have been recorded in the last thirty years, 1888 to the present time, require scarcely more than the fingers of both hands to enumerate, so rare have they been. What, then, becomes of these Mockingbirds with us in the fall, winter, and early spring is shrouded in mystery. One can only say that the species more than merely retains its hold in this section, absentees in the summer returning in the fall or other individuals coming in to take their places. Happily it does not succumb to the rigors of the climate in winter, but has proved itself eminently hardy and avails itself of the region

for winter residence, while, so far as our knowledge extends, it has not become a regular breeding bird in this section. Where it does breed to provide these winter resident birds is the mystery. May it not be that a very few nestings do occur summer by summer and some young are raised beyond the ken of the many field observers and thus a small but increasing representation has been maintained? There are certainly contributing factors of one kind or another, else we should not have continued to be in possession of even the limited representation of Mockingbirds, which we have. And the records indicate that all the winter resident birds, except the five-year resident Arboretum bird, move out of their chosen wintering haunts to localities where they live unobserved during the nesting season. And it may be assumed that some of these have found mates and bred, and thus have preserved the small representation happily maintained. A few nestings and probable nestings have been recorded in the issues of 'The Auk' and other publications in the series of years as occurring within the bounds of Massachusetts. These records are *bona fide* evidence that young are raised and that nestings occasionally, even if it be very infrequently, come to the knowledge of observers.

It is natural also to suppose that some migrant Mockers may push up into this northern limit of their range from the south in the spring, although the evidence of this is very limited, so comparatively few of the records presented are those of birds first observed in spring. There are but five out of thirty-two which indicate the presence of a Mockingbird that might be an actual spring migrant, the other twenty-seven occurrences being those of birds discovered in the fall or winter or too early in spring for any extended migration, and in most instances of birds being resident throughout the winter or far into it. The number of these in the enumeration is twenty-five. Thus our fall and winter appearing birds have not to any extent disappeared early enough to be regarded as migrants seeking the south. Indeed, migration of the species either in the spring northward or in the fall southward is but slightly indicated by the dates of the records. So it would seem that this northern representation is largely resident and is maintained probably by a limited number of nestings, few of which come to the knowledge of observers, and that this has

has been the case in a long series of years; also, that the maintenance of the species thus far north has been assisted to some extent by very limited migration. For a few spring migrants may slip unobserved into their breeding places year by year, especially females, not making their advent known by song.

ELSEWHERE IN MASSACHUSETTS.

In the following tabulation (pp. 399-402) are presented such published records for Massachusetts as have been found in a search through the literature, as well as additional instances supplied by various correspondents, arranged in chronological order.

Additional details are here given concerning a few of the later occurrences.

In 1909, the nesting of a pair of Mockingbirds on the grounds by Mr. Francis H. Allen at West Roxbury was a notable occurrence, a detailed account of which was published in 'The Auk' of October of that year.<sup>1</sup>

The birds of this family were last seen on August 8. But subsequent information furnished by Mr. Allen to Mr. Thomas L. Bradlee<sup>2</sup> shows that a Mockingbird was seen in the same locality on October 7, 1909 to May 14, 1910; again from November 6, 1910 to April 14, 1911, and still again was seen on November 5, 1911, it being regarded as presumably the same bird. Mr. Allen in a letter under date of February 29, 1920, informs me that this Mockingbird at his home was seen off and on from November 5 aforesaid to December 9 and re-appeared on March 7, 1912, being seen also on March 9, 17, 28, and April 20. Mr. Allen writes that in the interval between December 9 and March 7 this Mocker was seen about a quarter of a mile away on January 2, and in another place, also about a quarter of a mile away, on April 22. This Mockingbird, therefore, regarded as identical season by season, spent four complete seasons of wintering in this locality of West Roxbury, namely, from November 22, 1908, to April 22, 1912, being the father of a brood in the first summer after his appearance, but not seen in either of the summers following, but disappearing, as far as observation went, respectively on May 14, April 14, and April

<sup>1</sup> Auk XXVI, 1909, p. 433.

<sup>2</sup> Auk XXIX, Apr. 1912, p. 249.

## ADDITIONAL MASSACHUSETTS MOCKINGBIRD RECORDS

No.	Place	Date	Notes	Observer	Reference
1	Nahant	June, 1852	single bird	J. A. Allen	Proc. Essex Inst., 1864, vol. 4, p. 67
2	Springfield	Summer, 1855-60	pairs, breeding	Mrs. E. Harrington	Am. Sportsman, 1875, vol. 5, p. 370
3	Salem	June, 1874			
4	Newtonville	Nov., 1874	shot	H. A. Purdie	do do
5	Newtonville	Mar. 6, 1875		E. C. Greenwood	do do
6	Nantucket	Oct. 8, 1878	shot	G. H. Mackay	Bull. N. O. C., 1879, vol. 4, p. 64
7	Cambridge	Sept. 20, 24, '81	male	Brewster & Spelman	Mem. N. O. C., 1906, no. 4, p. 361
8	Fresh Pond	Dec. 10, 1881	female	C. R. Lamb	do do
9	Taunton	Mar. 26, 1883	adult female	J. C. Cahoon	Forest & Stream, 1883, vol. 20, p. 185
10	Arlington	Aug. 15, 1883	brood of 4 & adult	W. S. Townsend	Auk, 1884, vol. 1, p. 192
11	West Springfield	Summer, 1888	male (? pair)	R. O. Morris	Auk, 1889, vol. 6, p. 340
12	West Springfield	Summer, 1889	male (? pair)	do	do do
13	Nantucket	Aug. 11, 1889	breeding	G. H. Mackay	Auk, 1891, vol. 8, p. 120
14	Tatham	Sum., 1888-1891	pair and brood	R. O. Morris	Auk, 1892, vol. 9, p. 74
15	Marshfield	Aug. 15, 1889	pair and brood	H. A. Torrey	Orn. & Ool., 1889, vol. 14, p. 144
16	Sherborn	Oct. 26, 1889	pair (? breeding)	E. J. Smith	Auk, 1891, vol. 8, p. 117
17	West Springfield	Apr. 26-Aug., '90	pair and brood	R. O. Morris	Morse, Birds of Wellesley, 1897, p. 40
18	Marshfield	Sum.-Oct. 22, '90	pair and brood	H. A. Torrey	Orn. & Ool., 1891, vol. 16, p. 174
19	North Truro	Sept. 11, 12, 1890	2 or more young	G. S. Miller, Jr.	Auk, 1891, vol. 8, p. 119
20	Nantucket	Nov. 20, 1890	shot	G. H. Mackay	Auk, 1891, vol. 8, p. 120
21	North Scituate	? Nov., 1890	shot	J. B. May	in litt.
22	Quincy	Dec. 1, 1890	shot	E. H. Lothrop	Forest & Stream, 1891 vol 35, p. 511
23	Belmont	Apr. 5, 13, 1891	male	W. Brewster	Mem. N. O. C., 1906, no. 4, p. 361
24	Hyannis	Aug. 30, 1891	young bird	C. B. Cory	Auk, 1891, vol. 8, p. 395
25	Waltham	Apr. 7, 1892	male	H. A. Purdie	Mem. N. O. C., 1906, no. 4, p. 362
26	West Springfield	Summer, 1892	pair	R. O. Morris	Auk, 1892, vol. 9, p. 74
27	Lynn	Apr. 4, 1893	male	C. E. Chase	
28	Ipswich	Apr. 4, 1893	pair	N. Vickary	Orn. & Ool., 1893, vol. 18, p. 51
29	Amesbury	Nov. 7, Dec. 16, 1893		B. F. Damsell	Auk, 1913, vol. 30, p. 28

## ADDITIONAL MASSACHUSETTS MOCKINGBIRD RECORDS (Continued)

No.	Place	Date	Notes	Observer	Reference
30	Framingham	Nov. 15, 1894	male, shot	F. C. Brown	Auk, 1895, vol. 12, p. 84.
31	Nahant Beach	before 1895	nesting pair	R. O. Wentworth	Auk, 1895, vol. 12, p. 308
32	Groton	June, 1895	male singing	C. F. Batchelder	Auk, 1898, vol. 15, p. 333
33	Taunton	Apr. 30, 1896		B. A. Scudder	Auk, 1897, vol. 14, p. 106
34	Ludlow	late May, 1896		R. O. Morris	Coll. Berkshire Hist. Soc., 1900, vol. 3, p. 120
35	Cheshire	July, 1896		R. T. Fisher	
36	Worcester	Apr. 27-May, '97	male singing	Miss H. A. Ball	Auk, 1897, vol. 14, p. 224
37	Taunton	Nov. 11, 1897	♀ shot	A. C. Bent	Auk, 1898, vol. 15, p. 59
38	West Medford	Sept. 23-Nov. 27, 1898	killed by storm	Mrs. E. Bridge	in litteris
39	Belmont	Oct. 26, Nov. 17, 1898		R. Hoffmann	Mem. N. O. C., 1906, no. 4, p. 361
40	Belmont	Mar. 25, 1899		G. C. Deane	do
41	Belmont	Oct. 15, 1899		A. Frazer	do
42	Cambridge	Oct. 26, 1899		O. A. Lothrop	do
43	Pigeon Cove	Spring, 1901		Mrs. Marshall	do
44	Danvers	Early Apr., 1902		Mrs. E. S. Fowler	do
45	Danvers	Apr., 1902		do	do
46	Roslindale	Feb. 27-Sum., '02	nesting pair	G. Emerson	Auk, 1911, vol. 28, p. 116
47	Duxbury. Powder Pt.	Oct. 5, 1902-June 18, 1903	? female		
48	Nahant, East Point	Dec. 28, 1903, Jan. 30, 1904		King, Wellman & Wright	Bird-Lore, 1904, vol. 6, p. 8
49	Belmont	May 29, 1904	male	R. Hoffmann	Mem. N. O. C., 1906, no. 4, p. 361
50	Dedham	Dec. 18, 1904-Feb. 3, 1905		R. B. Worthington	F. H. Allen, in litt.
51	Fall River	Apr. 11, 1906		Mrs. M. B. Horton	
52	Lexington	Feb. 8-Jy. 10, '07		W. Faxon	Auk, 1907, vol. 24, p. 446
53	Ipswich	Jan.-Apr. 26, '08		Miss S. E. Lakeman	Mem. N. O. C., 1920, no. 5, p. 170
54	Newburyport	June 5-?, 1908	♂, wintered	S. W. Bailey	Auk, 1911, vol. 28, p. 372
55	West Roxbury	Nov. 22, 1908-Aug. 8, 1909	♀, nested with above male	F. H. Allen	Auk, 1909, vol. 26, p. 433



## ADDITIONAL MASSACHUSETTS MOCKINGBIRD RECORDS (Continued)

No.	Place	Daté	Notes	Observer	Reference
56	West Roxbury	Oct. 7, 1909-May 14, 1910	? one of above pair	F. H. Allen	Auk, 1912, vol. 29, p. 249
57	Cohasset	Nov. 17, 1909	two birds	Mrs. Edmund Bridge	in litteris
58	Cohasset	Jan. 28, 1910	one bird	do	do
59	Groton	Winter, 1909-10		Miss L. L. Hetzer	do
60	Nantucket	June 27, 1910	breeding pair	E. P. Bucknell	in litteris
61	Pigeon Cove	Sept. 20, 21, 1910		C. R. Lamb	Mem. N. O. C., 1920, no. 5, p. 170
62	West Roxbury	Nov. 6, 1910-Apr. 14, 1911	? same bird as 55	F. H. Allen	Auk, 1912, vol. 29, p. 249
63	Squantum Head	Mar. 11, 1911		F. P. Spalding	in litteris
64	Ipswich	Aug. 26-28, 1911		C. W. Townsend	Mem. N. O. C., 1920, no. 5, p. 170
65	Nantucket	Oct. 23, 1911	pair and 1 young	T. S. Bradley	Auk, 1912, vol. 29, p. 249
66	West Roxbury	Nov. 5, 1911-Apr. 22, 1912	? same as 55	F. H. Allen	do
67	Groton	Nov. 9, 1911	? same as 59	Miss L. L. Hetzer	do
68	Manomet	Dec. 14, 1911		W. S. Brooks	Auk, 1912, vol. 29, p. 249
69	West Gloucester	Feb. 9, 1912		J. Kittredge, Jr.	Mem. N. O. C., 1920, no. 5, p. 170
70	Quincy	Apr., 1912	three birds	A. P. Morse	in litteris
71	Danvers Highlands	Nov. 12-26, 1912		Mrs. E. P. Fowler	in litteris
72	Hamilton	Oct. 19, 1913		C. J. Maynard	Mem. N. O. C., 1920, no. 5, p. 170
73	West Roxbury	Mar., 1914	seen twice	F. H. Allen	do
74	Westport	Apr. 5, 1914		Mrs. H. B. Horton	in litteris
75	Watertown	Nov. 29, 1914-Jan. 2, 1915		Miss M. G. Hinds	Bird-Lore, 1915, vol. 17, p. 210
76	Newburyport	Sum., 1914-1917	annual nesting	F. B. Currier	Mem. N. O. C., 1920, no. 5, p. 170
77	Nonquitt	Sum., 1915 or '16		E. M. Stetson	in litteris
78	Ipswich	Aug. 28, 1916		Dr. C. W. Townsend	Mem. N. O. C., 1920, no. 5, p. 170
79	Greenfield	Summer, 1916	nesting pair	Mabel Comstock	Bird-Lore, 1916, vol. 18, p. 361
80	Westport Harbor	Nov. 7, 1916		Mrs. M. B. Horton	in litt.
81	Gloucester, Pigeon Cove	Jan. 17-May 9, '17		Mrs. Babson	Mem. N. O. C., 1920, no. 5, p. 170
82	Fall River	Apr. 2-15, 1917	♂ in song	Mrs. M. B. Horton	in litt.
83	New Bedford	Dec., 1917-early		E. M. Stetson	do

## ADDITIONAL MASSACHUSETTS MOCKINGBIRD RECORDS (Continued)

No.	Place	Date	Notes	Observer	Reference
84	Danvers	Mar., 1918 late Nov., 1917- late Mar., 1918 Dec. 21, 1918- Jan. 4, 1919	same bird two years died	Mrs. E. S. Fowler and A. P. Morse	do
85	Edgartown	Feb. 1-late spring 1917 Oct., 1917-Spr., 1918 Nov. 1, 1918- Spring, 1919 Aug. 26, 1919- Apr. 6, 1920 Wint. prev. to '20 May 19, 1918	male; returning four winters	Mrs. J. B. Worden	do
86	Springfield		♂ ?	R. O. Morris	in litt.
87	Brookline		♀ ?	F. H. Allen & C. W. Townsend	do
88	Marion	Oct. 3, 1918-May 1920 ?		Miss L. H. Hand	do
89	Rowley	Nov. 15, 1918		J. D. Sornborger	Mem. N. O. C., 1920, no. 5, p. 170.
90	Williamstown	Winter, 1908-19		Walter Faxon	in litt.
91	West Roxbury	Jan. 5, 1919		F. H. Allen	do
92	Dartmouth	Feb. 22-May, '19 (a) (b)	? ♀	Mrs. F. H. Stone and Mrs. E. M. Stetson	do
93	Danvers	Mar. 26, 1919	♂ in song	A. B. Fowler	do
94	Arlington Hts.	May 19-Oct., '19	do	T. L. Quimby	do
95	Arlington	first half of Je, '19	do	Miss A. W. Cobb	do
96	Bridgewater	late Nov., 1919- Apr. 29, 1920		Miss V. T. Wells	do
97	Cohasset	(? Dec. 10, 1919) Jan. 7-Feb. 8, '20		Dr. J. B. May	do
98	Mattapoisett	Jan. 1-Apr. 26, '20		J. E. N. Shaw	do
99	Roxbury	Dec. ?	B. S. N. H.		

22, when, we may suppose, he left in the search of a mate. It will be observed that his mate appeared on April 2 of the first season and that he waited a considerable time after that date each succeeding season before taking his departure. The dates of his subsequent returns year by year are interesting as indicating that as the season of winter approached he sought the same hospitable quarters which had served him well the previous winter and winters, returning respectively on October 7, November 6, and November 5.

Mr. E. P. Bicknell of New York gives me the details concerning the pair of Mockingbirds seen by him on Nantucket June 27, 1910. Mr. Bicknell writes, "The evidence was quite conclusive that they had either eggs or young on the grounds of an unoccupied summer cottage near the bathing beach. Both birds always showed increased concern whenever I approached a certain spot where the beach grass (*Ammophila*), that grew all about, was thickly massed along an old fence. They uttered harsh cries and frequently dashed close to my head, and once when, in searching for a fledgling, I was bending down and parting the grass, one struck my back with considerable force. No young were discovered nor could any nest be found in the few small pine trees nearby. A nest may have been in a thick growth of Japanese honeysuckle along one side of the house, but as I was leaving the island by the mid-day boat, there was not time enough for a complete search. The next year, when again on the island in June, I explored the same locality a number of times, hoping that the birds might have returned, but nothing was seen of them. I know of no other record of the Mockingbird on Nantucket, except the old one of Dr. Brewer, October 8, 1878. It is a scarce bird about my home on south-western Long Island, where I have not seen one for several years."

Concerning Mr. Currier's nesting records in Newburyport, he writes that he saw one each in 1914, 1915, and 1917. In July, 1915, he saw them in many places," indicating probably the members of the two families of that summer, when the young were grown. He mentions hearing two male birds sing in the seasons of 1915, 1916, and 1917, "his own" Mocker and one other. As late as August 1, 1916, he records "two singing not a great distance apart, about

three fourths of a mile from his house." In 1915, in July, he heard one singing often, about all day and half the night near his house, probably his permanent resident Mocker returned after the season's nesting.

This series of nestings in Newburyport in four successive years, 1914 to 1917, very closely resembles the series recorded above in Springfield about 1860 on the authority of Dr. Allen and in 1888 to 1891 on the authority of Mr. Morris, the intervals ranging very little and the limit coming at the end of four seasons between these rare series of breeding occurrences. These Newburyport nestings may be regarded as in harmony with the fact that Essex County has been also the chosen breeding ground of other southern species, whose northern limit penetrates Massachusetts, such as the Orchard Oriole, the White-eyed Vireo, and the Yellow-breasted Chat, representations of which have been more constant in that county than in other portions of the State. It may also be noticed that the seven nestings and all but two of the winter records are subsequent to 1913, or within the last six years, indicating an unparalled presence of breeding and winter resident birds within this period, which marks a most encouraging strengthening of the foothold of the species in Essex County. And may we not venture to conclude that the records of winter resident Mockingbirds scattered so widely in recent years even into Maine, indicate that these winter residents find mates and families of young are raised, perpetuating, let us hope, and increasing the northern representation already well established in New England.

Mrs. E. P. Fowler of Janvers furnished the record of a Mockingbird in Worcester, seen early in April, 1902, in the garden of Judge Forbes. The bird was in full song, Mrs. Fowler states, and adds that on the third day of their visit to its locality they learned that the gardener had killed it, misunderstanding an order to kill some other birds. Mrs. Fowler further states, "early that same year after the above incident we learned of another Mockingbird near the mansion house in Green Hill Park. We went and saw this bird. In a few days some careless boys stoned and killed it." Two shocking tragedies.

Mr. T. L. Quimby furnishes the record at Arlington Heights in 1919. Mr. Quimby writes, "As I recall it, it was the morning of

the 19th or 20th of May that I first saw the bird, and I saw him several times afterward in the locality back of the Thorncliff Academy on Robbins road. My attention was first called to him by the exuberance of his song, singing from the tip-top of a cedar tree. One of his favorite antics was to spring directly up into the air, four or five feet from his perch, and while hovering there pour forth his full-throated song. Others later saw him with me. I thought at one time later that I had seen the female, but of that I am not sure and doubt much if I did. I searched the thicket round about very thoroughly for the nest, but without avail." Mr. Quimby continued to see this bird "at intervals up to October, later in the season about the golf links just a little south of his former haunts." Mr. Quimby, under date of March 15th, is quite sure that he saw this Mockingbird a few days ago having completed a winter residence in that vicinity. Later, under date of May 11, he writes, "I have satisfied myself that I have seen the Mockingbird since last summer (and fall), I have thought more than once that I had caught a glimpse of him at a distance, but I have my doubts, for I have not been able to locate him near his haunts of last summer, and I made a very thorough search last Sunday."

Mrs. Edmund Bridge informs me that in the fall of 1898 a Mockingbird appeared on her place, September 23, and came daily up to November 27, the date of the great blizzard. Mrs. Bridge states, "On that day, at 4 P. M. this bird was found half frozen in our ivy vine where it had taken refuge. It was taken into the house by my friend Mrs. Sass who tried hard to revive it, but in vain." In this instance we have an early fall bird, which, if it had had migrating inclinations, would naturally have earlier disappeared, remaining and plainly undertaking winter residence, in which as have many others which are herein recorded, it might have been successful, except for the terribly destructive storm which overtook it. Mrs. Edmund Bridge also informs me that she observed two Mockingbirds in Cohasset on November 17, 1909. She states that these birds were three miles apart, and so could not have been the same individual, and that on January 28, 1910, she saw one bird, presumably one of the former two.

Regarding the record of a Mockingbird seen by Miss. L. L. Het-



zer about the Lowthrop grounds at Groton on November 9, 1911, she adds that "Two winters before one wintered there and was seen at intervals throughout the winter about the grounds."

Mr. Winthrop S. Brooks<sup>1</sup> saw a pair at Manomet, Plymouth County, on December 14, 1911. One of these, a female, he shot and gave to the Boston Society of Natural History. The bird has been mounted and is shown in the Society's collection of New England birds.

Mrs. E. S. Fowler, under date of March 29, 1920, states of the bird seen at Danvers Highlands on November 12, 1912, that he remained the last two weeks in the month; that he sang most of the daylight, but became so hungry for the crumbs scattered near the piazza that the house cat caught and killed him; and that Dr. Fanning of Danvers owns the mounted specimen.

Mr. Edward M. Stetson of New Bedford writes me under date of March 17, 1920, of a Mockingbird in his grounds in the winter of 1917-18, definitely observed on January 13, having been present two or three weeks earlier. Mr. Stetson states "He stayed with us practically all winter, and we saw him at intervals of a few days until he disappeared in the spring, early March, I think. He didn't seem to mind the cold weather and seemed very cheerful on the coldest days. I remember hearing his voice from the top of an oak tree one morning, when the thermometes was only 4° above zero. I never heard him sing a real song, but he had a cheerful little warble which he gave occasionally and which sounded very unusual on a cold winter's day."

Mrs. M. B. Horton reports concerning the Mockingbird at Westport Harbor on November 7, 1916, that a friend informed her that she saw the bird every day for two weeks, but did not hear it sing.

Mrs. James B. Worden writes me an interesting account of a Mockingbird at Edgartown, which is now, 1920, spending its fourth winter in gardens of shrubbery there. It appeared in the winter of 1917, being first seen by Mrs. Worden on February 18, 1917, but she states that it had been present from the first of the winter; that when the spring came, it sang, and that it remained

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<sup>1</sup> 'Auk' XXIX, April, 1912, p. 249.

about the garden and around the centre of the town until late spring but was not seen through the summer; that on October 17 it re-appeared in a garden not far from where it was first seen, and it remained in these gardens nearly all winter and sang again in the early spring but that by the time the trees were well leaved out, again it disappeared from view until November 1, 1918, from which time it was heard once more all the winter; that Mrs. Chadwick fed the bird each winter, and it became very tame; and that once more it disappeared when the trees leaved out, but was seen however, by Mrs. Worden on August 26, 1919, when she observed it fly down and catch a moth on a path beside the garden where she usually saw it and then fly back into the shrubs. This occurrence leads Mrs. Worden to think that, perhaps, the bird has remained thereabouts all the time but was not observed. But it would seem to be unlikely that summer by summer it would entirely escape detection throughout the season in haunts that were of its choice the remainder of the year, but that rather it changes location sufficiently, perhaps, to term the movement a migration, and so departs from and returns to its chosen winter haunt year by year. The August date on which it was seen in 1919, namely, the 26th, is near enough to autumn and remote enough from tree-leaving time, to admit of such migration, limited as it may have been. The Mocker's love of concealment, however, when not moved with desire of song and display may, however, account for the later portion of the season of absence as only apparent, but I think not, for the entire period extending from late spring to mid-October, or the first of November, which times mark this Mocker's real re-appearance to be in evidence thence forward winter by winter until late May. In 1919, Mrs. Worden's letter states that Mrs. Chadwick did not see the bird in its accustomed place until November, the usual time of its re-appearance. Under date of March 12, 1920, I am informed that Mrs. Worden saw this Mocker on March 1, 2, and 9, proving that it had passed safely through the very severe winter of 1919-20, and by letter of May 7, Mrs. Worden informs me that her last observation of the bird was on April 6, "when it was making a great show of itself flying about in its usual haunts. I did not hear him sing this spring as the weather has been so wet and I dared not venture out. Mrs. Chadwick, who

returned after the middle of the month (April), has not seen or heard him. I know of no one feeding him this winter."

Mr. A. P. Morse furnishes me with the record of a Mockingbird at Danvers, January 4, 1919, "found tangled in a tendril of Virginia Creeper" and which "had an injured foot." This bird is now in the Essex County collection of the Peabody Museum of Salem. Mrs. E. S. Fowler of Danvers kindly supplies the earlier data of this bird. She states that it appeared in the last week of November, 1917, and was then singing; that it was seen several times in February and up to late March, when it was also singing but then disappeared from observation; that, however, it made its re-appearance, presumably the same bird, in December, about the 21st day, on Lindall Hill, and sang even then; that it was fed daily by Mrs. Peach, who on January 1, 1919, noticed that it had an injured foot which left tracks of blood on the grass, having lost a toe, so that it could not cling to the vine on the house where it was accustomed to perch and could not walk well, and fearing for its safety, she took it to the Peabody Museum. This bird was then well started on its second winter in the neighborhood after an apparent absence from late March preceding.

Miss Louise H. Handy of Marion writes me under date of May 27, 1920, that this Mockingbird, first appeared there on October 3, 1918, singing in subbued tones, and continued to sing on later dates. He passed the entire winter in the vicinity of the hotel and remained throughout the summer of 1919, singing freely, and seen and heard by the hotel guests. On October 7, Miss Handy states that she saw two Mockingbirds, both feeding on cranberry bushes and rose hips, but after November only one was seen. When the Cedarbirds and Pine Grosbeaks came, he would not feed on the cranberry bushes at all, and not until they left did he go to them. He was still there on October 7.

Mrs. Frances H. Stone, informs me through Mr. E. M. Stetson of New Bedford that a Mockingbird appeared on her summer place in Dartmouth, near Nonquitt, on February 22, 1919, and that she saw it, off and on until April or May, when it disappeared for the summer; that it came again on November 17, 1919, and stayed around until quite recently, but that it seems to have departed again now. (The date of the letter is March 26, 1920.)

Mrs. Stone reports that she had not heard it sing at all, and that since the big storm of February 5th it was minus a tail. The record indicates a female bird, which in 1919 left her winter quarters in April or May, probably for mating and nesting, and in November returned. Her disappearance in late March, 1920, indicates an earlier wandering than in 1919, (due, perhaps, to the accident which befell in the loss of her tail.) A letter under date of May 3 states that Mrs. Stone has not again seen the bird, and "she surely would have seen it, if it had not gone away, as it stayed around near the house most of the time." At the time of its disappearance warm spring weather was prevailing.

Mr. J. E. Norton Shaw in letters under date of March 3 and 12, 1920, furnishes the record of a Mockingbird in Mattapoissett in the winter of 1920, which was first seen on January 1, and on the 18th began to come to feed on the berries of the high laurel bushes in a piazza box with other birds, and since that date has been approximately a daily visitor. Mr. Shaw writes, "This bird which now comes to my hand is, I think, a female, as it is not as definitely marked as the first one I saw (referring to one seen in Marion in 1919). Since February 18 I have seen it every day. So far it has made no sound except angry chirping as though scolding other birds who interfere with its feeding." Mr. Shaw then describes four feeding places he has provided for the birds, one on a window ledge, two suspended from branches of a maple tree close to his veranda, and a fourth on the ground beneath the tree, where he has spread hay seed from the barn loft. Mr. Shaw states, "The Mockingbird has taken charge of these four feeding places. It perches in the maple tree from which the boards are suspended, arriving as early as 6.15 A. M. and staying until nearly dark. It seldom leaves for more than a few minutes. It has done this now for about a week or ten days, growing gradually bolder. It frequents all the boards and the ground, even coming to the window board and peering into the house. It attacks every bird that approaches these boards or the feeding ground." Mr. Shaw then graphically describes an attack this Mockingbird made upon a Flicker which appeared and started to eat and fastened to one of the boards, stating that after working itself into a rage, ruffling its feathers, whetting its beak, and shifting from one perch

to another, finally it dropped directly upon the back of the Flicker and darted at him with its beak; that it soon again descended on him and knocked him completely off the board, the Flicker falling half way to the ground as though injured, and then going to the trunk of the maple tree, while the Mockingbird flew back and forth near him, swooping past him; that very shortly the direct attack was renewed when the Flicker flew back to the board, the Mockingbird descending upon him and repeatedly striking him with its bill; and that small birds are attacked in the same way, except that he has never seen them actually hit, but they are driven from the boards and feeding ground constantly. Mr. Shaw states, "To offset this, I have established a second feeding ground with a suspended board on the north side of my house, under a large fir tree. Here, though less protected, the various birds now collect to feed." Mr. Shaw enumerates eighteen species, including the Mockingbird, which had visited his feeding places in the last days of February 1920. And still later, under date of May 1, 1920, Mr. Shaw writes, "The Mockingbird has been with us daily up to Monday, April 26. On that day it stayed around the feeding board until nearly dark. For the last month it has fed solely on dates, with an occasional bite of cooked fat beef. One day it did not appear at all up to six P. M., when I discovered that no dates were on its board. I did not see it anywhere, but went out and put its usual amount at the feeding place. Inside of five minutes it was at the board feeding, although apparently nowhere in the offing when I went out. I have listened carefully for its song, but have heard nothing except the harsh chirp with which it warns other birds. I have not seen it since last Monday, although we have watched carefully. It has remained very belligerent, attacking Blue Jays and Robins and showing much annoyance at any bird that came near." The absence of song up to late April indicates a female bird and its time of disappearance is in agreement with many other records of wintering Mockingbirds.

In the period 1884 to 1895, inclusive, thirteen years, ten nestings occurred, a period when our earlier ornithologists were much afield with gun to collect and were apparently stimulated by the earlier reported occurrences to gain for their own collections as full a re-



presentation of the species breeding locally as might be within their acquirement. Sentiment has been changing during the last twenty years under the influence of the Audubon Societies, and no longer, I think it may be said, would the taking of Mockingbirds in their family life be sanctioned for even private scientific use. The protective laws which an intelligent public opinion has enacted, crystalized under the head of the eminent ornithologists themselves, are a further safeguard against this.

Of these records, in thirteen instances the bird is actually recorded in winter; in six of these it spent all or most of the winter; in two instances it was observed up to November 17 and 27 respectively, in the latter case dying from exposure; and in the case of the three occurrences, wherein the bird is recorded as shot, the dates are November 11, 15, and 20 respectively, all of which November dates are certainly late for birds intending full migration. The more natural presumption is, I think, that these birds had intended winter residence. The October 26 occurrence at Sherborn, a rather late date for migration, may not mark, it is fair to assume, the date of the bird's departure, but signifies it was seen on that day and that day only. The earlier occurrence at Miantucket, when the bird was shot on October 8, may be regarded as indeterminate in respect to migration or winter residence. The notable feature of the list is the absence of September and the fewness of October occurrences, the period of the the year when migrating Mockingbirds would naturally be getting away, and when the individuals which were not purposing migration might be holding themselves in seclusion in haunts where food was still plentiful and foliage still gave abundant shelter, these birds seek village and park for winter residence, as the season advances towards winter and the conditions become wintry.

Records of the occurrences of the Mockingbird in the other New England States and in Canada follow.

#### CONNECTICUT

In 'Birds of Connecticut' by Messrs. Sage, Bishop, and Bliss, 1913, fourteen records of Mockingbirds are presented, namely, in Stratford and New Haven (Lindley)<sup>1</sup>; Saybrook (J. N. Clark);<sup>1</sup>

<sup>1</sup> Merriam, *Birds of Conn.*, p. 7.

Milford (G. B. Grinnell);<sup>1</sup> Suffield, (Lester);<sup>1</sup> near New Haven, May 30, 1877 (Osborne);<sup>1</sup> New Haven, seen by Dr. Bishop, December 18, 1882; Jewett City, nest with five eggs, June 20, 1884, second clutch of three eggs, June 28, female shot (Prior)<sup>2</sup> West Haven, one reported seen, July 21, 1894; New Haven one flew into greenhouse, November 2, 1904, seen by Dr. Bishop; Middletown, one seen June 9, 1907 (Cady); West Hartford, one seen by Mrs. L. A. Cressy, November 30, 1910, to February 9, 1911; (Mr. Lewis W. Kipley, Chairman of the Hartford Bird Study Club, who holds the composite records of the club, transmits to me the record of an extension of this bird's stay to April 17). Another seen the same winter by Mr. Edward P. St. John;<sup>3</sup> Portland, one seen by Mrs. C. H. Neff, February 8 to April 4, 1911.

Mr. Albert Morgan of the New Haven Bird Club, under date of May 9, 1920, gives these further details of the West Hartford Mockingbird of the winter of 1910-11, which was first seen by him one morning in early November. "When I spoke about my find before the members of the Hartford Bird Study Club, one of the young lady members mentioned the fact that she had been feeding a similarly marked bird hard boiled eggs at her window sill and then I found out that my bird was the second seen within about a mile of each other in the town of West Hartford that winter. The one under my observation would not touch boiled egg, but ate ground up meat scraps, (cooked) with a relish. My visitor stayed with me until April, and not once did I hear it utter a note of any kind, he left the region of my house as silently as he came."

Mr. Charles E. Prior<sup>4</sup> states concerning the nesting at Jewett City in 1884 that the first batch of five eggs was taken and that two of the three eggs of the second batch were also taken, after which one more egg was laid; that the nest was in a blueberry bush by the side of a rail-fence which separated the barren fields from the highways; that the male bird was not seen and that the female was shot; and that he and his companion also took the bush containing the nest and the two eggs.

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<sup>1</sup> Merriam, *Birds of Conn.*, p. 7.

<sup>2</sup> O. and O., IX, 8, pp. 94, 95.

<sup>3</sup> Bird Lore, XIII, 2, p. 97.

<sup>4</sup> O. and O. IX, 1884, 8, pp. 94, 95.

Mr. St. John states concerning the West Hartford occurrences, in the winter of 1910-11, that the two birds were commonly found about a mile apart, both remaining very near the places where they regularly fed, though they had been seen together a few times at one feeding station, and that Mrs. Cressey and a neighbor believed that three Mockingbirds had visited the food tables, but not more than two had been seen at one time."

Following the enumeration of the fourteen records in 'Birds of Connecticut,' Mr. Sage states, "The late Frank L. Burr, of the *Hartford Times*, once told me that about the time of the Civil War a pair of Mocking birds nested in the meadow north of Avon St., Hartford. There was no question as to the identity of the birds, but the eggs were destroyed. A year or two later a pair had a nest quite near a house on Wethersfield Avenue in the same city. This nest also had eggs which were destroyed. Gurdon Trumbull, the artist and ornithologist of Hartford, now dead, informed me that he remembered distinctly two or three pairs of these birds nesting, about 1860, in what was then known as Gillette's Grove, Hartford. He saw the birds and heard them sing. The eggs were taken by Mr. Trumbull and a boy friend.

These Hartford nestings in the early sixties, mentioned as four or five in number, have a special significance when viewed in connection with those which occurred in Springfield, Massachusetts, about the same time. The year 1860 is named in both instances as well as the few years next following. It would seem, therefore, that period was a time when the Mockingbird made one of its stronger efforts in the northern limit of its ranges to become a regular summer resident, and in the records already given indicate another similar effort in Massachusetts, in the five year period 1888 to 1892, when occurred eight nestings, four in Springfield, 1888 to 1891, one in each year; one in Marshfield, 1889; one in Provincetown, 1890; one in Hyanis, 1891; and one in Ipswich, 1892.

Mr. Arthur G. Powers<sup>1</sup> in 'Bird-Lore's' Christmas census of 1911, at Hartford, records under date of December 24, a Mocking bird, and adds, "To my knowledge a Mockingbird has spent the last three winters in the same identical spot, even staying in the

<sup>1</sup> Bird-Lore, XIV, 1, 1912, p. 23.

same clump of rose bushes nearly all of its stay. I have watched diligently for three years to learn of its summer haunts, but am still as much in the dark as when I began. Last winter I saw two others wintering in different places in West Hartford, all three disappearing synchronously." These individuals, it may be assumed, were the same as those recorded above by Mr. St. John, except that Mr. Powers observed one of the birds for *three* successive winters.

I have seven other Connecticut records all subsequent to the publication of 'Birds of Connecticut,' except three, namely:

Mr. Lewis W. Ripley furnishes from the records of the Hartford Bird Study Club the record of a Mockingbird in song seen at West Hartford on March 14, 1904.

Mrs. Florence C. Paine of East Woodstock contributes through Mr. A. W. Upham the record of a pair of Mockingbirds coming to her garden in that town in the year 1906 and remaining three and a half days. Mrs. Paine states, "They appeared one beautiful afternoon when the Oriental poppies, iris, and other perennials were in bloom, so I think it was early June. The male bird sang but little that first day until night. There was a full moon, and we were awake many times following them from one side of the house to another, as singing they flew about to different trees and alighted on the piazza rails about the house and by our bedroom windows, the song sounding so loud in the quiet moonlight. They selected a large old appletree just outside the flower garden for a home and began to build. Alas, the Robins living there claimed the whole tree and flew at them every time they brought a stick or straw. They stood their ground bravely for two days, as they are great fighters, and both they and the Robins lost many feathers before they gave up and flew away, to be seen no more, leaving a nest about a third built."

Mr. H. C. Bigelow informs me under date of March 14, 1920, that a Mockingbird spent the winter of 1906 on Cedar St., New Britain, about a greenhouse. Mr. Bigelow states that the bird was around there more or less all winter, but that he did not see it after the warm weather came in the spring; that it did not sing, but gave only a clear chirp; would peck at the seed pods on the rambler roses, and was fond of apples put in the crotches of shrubs for it.

Mr. Bigelow has not heard of one being seen in New Britain since.

There was a Mockingbird lived at Fairfield<sup>1</sup> in 1914 noted on September 16 or on earlier by Mr. W. B. Wheeler and seen on September 27 by Mr. Wilbur F. Smith. This bird continued to be observed up to October 14 by Mr. Wheeler and was then singing from his gate-post. Mr. Smith also furnishes a record for Bridgeport in 1916, stating, "The last of February I was told of a bird that puzzled those who had watched it all winter, and, on March 3, I went and found it to be a Mockingbird; it had been about Laurel and North Avenues all winter."<sup>2</sup>

Mr. Lewis W. Ripley also furnishes the records of a Mockingbird seen at Windsor on January 14, 1912, and of one seen at Plainville on April 9, 1914, which was singing.

Mr. Wilmot records one in the centre of West Haven,<sup>3</sup> which "appeared on November 8, 1916, and has been observed almost every day up to January 22, 1917. It usually appears with a flock of Starlings. It pays no attention to food put out for the birds, but prefers to eat the berries of the bittersweet and honeysuckle vines which grow along the fence." Mr. Wilmot states<sup>4</sup> further concerning this bird, "I announced in the April, 1917, number of 'The Auk' the presence of a Mockingbird in West Haven from November 8, 1916, to March 24, 1917. (Mr. Wilmot's records as published did not extend so far.) On July, 1917, the bird returned and is passing the winter at the same place (January 20, 1918.) Last winter the bird would not take food put out for it, but preferred to eat honeysuckle and bittersweet berries, but this winter it takes food put out for it and has become so tame as to alight on the window-sill and eat food. I have also observed it eating the dry seed pods of the asparagus which it swallowed whole, as it does the berries of the bitter sweet.

"On November 18, 1917, at Colonial Park, a summer resort about two miles from West Haven, I observed another Mocker which was eating the berries of a honeysuckle vine that grew along a fence. The extreme cold weather during the last few days of De-

<sup>1</sup> Bird-Lore, XVII, 2, 1915 p. 130.

<sup>2</sup> Bird-Lore, XVIII, 3, 1916, p. 173.

<sup>3</sup> Auk, XXXIV, April 1917, p. 215.

<sup>4</sup> Auk, XXXV, April 1918, p. 229.



cember and the first of January I thought would surely kill our Mocker, but he came through all safe and seems none the worse. During that time the thermometer went as low as twelve degrees below zero, which proves that Mockingbirds are not altogether southern birds, but can stand our northern winters. The plumage of this bird is quite different this winter, having a great deal more white in the wings and tail, so I would judge that it was a young bird when it passed the winter of 1916 and 1917 with us."

Mrs. Gilbert W. Chapin of Hartford contributes the record of a Mockingbird seen by her and two other members of the Bird Study Club near Arnold's Ice Pond in West Hartford on March 15, 1919. Mrs. Chapin states that the bird was singing, but not the full song as heard by her in the south, that, however, it was the real song of the Mockingbird, but not as loud and more fragmentary; and that several succeeding days they visited the vicinity, but failed to find it. Mr. George H. Gabriel<sup>1</sup> was also an observer of this bird which he found singing in a small peach tree in a backyard he informs me. The bird evidently was changing locations, either by limited migratory flight or mere wandering. The date is rather early for full migration from the south.

Four, perhaps five, of these records indicate winter residence, one of them a return of the bird for a second and a third winter.

Of these twenty Connecticut records with definite dates, from 1877 to 1919, a period of forty-two years, ten are those of winter resident birds, including one which was probably such; five are summer records, including the nesting of 1884, and the attempted nesting of 1906, two represent fall visitants; and three are early spring visitants. In ten instances the bird was observed on one day only, indicating that it was probably changing location, or was not followed up by the observer. One wintering bird returns a second winter and another a second and a third winter. In the case of seven of the winter records the bird was constantly in view for weeks, and in two instances continued to be in evidence until April 4 and 17 respectively, a time when Mockingbirds which have completed winter and early spring residence generally disappear from their chosen winter haunt, as the Greater Boston and many other

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<sup>1</sup> Bird-Lore, XXI, 4, 1919, p. 243.

records indicate. Shall we not assume that the desire for a mate actuates them at this time, and that probably a fair proportion of them are successful in their quest, and nestings ensue, of which in many instances we gain no knowledge? Certainly, it is not a likely supposition that these northern winter resident birds leave New England for more southern locations after enduring the rigors of its climate throughout the winter and reaching the opening spring. And, after all, although the number of intelligent observers has largely increased within the past twenty years, it must be true that a comparatively small area of New England, even in its more populated portions, is carefully or at all methodically searched by competent observers.

#### RHODE ISLAND.

'Birds of Rhode Island' by Reginald H. Howe, Jr., and Edward Sturtevant, published in 1899, with 'Supplementary List' in 1903, contains five records for the State, covering eight individuals, within the period 1877 to 1897 inclusive. They are these: "Mr. A. W. Thatcher took a bird in East Providence in 1877. Mr. Harry G. White reported one singing at Newport on November 2, 1888. Lieut. Wirt Robinson writes that he saw one at Newport on November 5 and 12, 1889. Mr. F. T. Jencks observed one at Drawnville, October 18, 1891, and he has since seen two others there. There was a pair in Roger Williams Park, Providence, in the autumn of 1897." It will be observed that all of these records, except the first, which is without seasonal date, register autumn occurrences. One bird, is recorded as singing on November 2, as might be expected of a male, since the fall period of song usually extends at least a fortnight later.

Mr. Harry S. Hathway of Providence, under date of March 31, 1920, has given me the following six records. I quote: "Dr. Edwin R. Lewis of Westerly told me in February, 1900, of a pair of Mocking birds which have been summer residents near the farm of Frank Larkin on Beach St., in that town for three years. The Larkin family had lived in the south and were sure of the identity, for they knew its song. Last fall, 1901, I saw the fourth Mockingbird I have seen since living at Brownsville, (F. T. Jenks). Edwin Dow informed me he had seen a Mockingbird in the orchard back of

his home in Auburn on three or four occasions the last week in May, 1902, and he fully described the bird and song, leaving no doubt as to the identity. June 24, 1917, I saw a Mocking bird in bushes beside the road at Dunn's Corner, Westerly. It flew to a telephone wire, where it stayed for a few minutes and gave me a good opportunity for examination. I did not see it again in this locality, although I visited it on several occasions a week apart."

March 9, 1920, Mr. Moses J. Barber informed me that a Mockingbird had been feeding on suet, suspended in the bushes in his yard, since early in February, at East Greenwich. The bird has not been seen since. A Mockingbird was seen eating berries from a window box on February 27, 1920, by Miss Louise C. Humphrey in Rumford. Miss Humphrey is a former resident of the south and knows the Mockingbird well."

Seven other Rhode Island occurrences have been recorded. They are, a bird at Bristol in 1910 noted by Miss Julia Herreshoff,<sup>1</sup> who states, "The Mockingbird came with the blackbirds, just noticed March 12. I did not see him after July 25."

A second occurrence is a nesting at Barrington in 1911, an account of which <sup>2</sup> is given by Miss Bertha B. Smith, who records that on April 7 a single bird was seen, which on the 19th, and three days following on account of its song was identified as a male; that on April 24 two birds were seen and from that date until the last of June they were observed almost daily. Miss Smith states that their nest was discovered about the middle of May in a spruce tree and contained four eggs; that only three young were known to hatch; that the birds stayed near the place of nesting and seemed inclined to quarrel with other birds; that early in September the adult birds and their young were seen every day, but that on September 20 the male alone remained and was observed until October 21; that a few days later, however, the female re-appeared with the male and both were seen daily; that on February 8, 1912, they were still in the vicinity, and the family owning the grounds near which they nested fed them all winter.

Under date of May 29, 1912, Miss Smith wrote, "The Mocking-

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<sup>1</sup> Auk, XXVIII, 1911, p. 116.

<sup>2</sup> Bird-Lore, XIV, 5, 1912, p. 310.

bird (male) is still in Barrington, but we have been unable to discover any other individual this spring. Of the three that were hatched last spring only one was with the parent birds in the fall. All three birds were seen late in November, and then for a few weeks they disappeared. The male returned and stayed all winter. This spring I have made careful search and inquiries, but find only one bird." Mrs. M. B. Horton of Fall River observed this Mocker in Barrington on June 12, 1912. Mr. E. E. Caduc has obtained records of two other occurrences. He informs me that in company with Mr. W. E. Pring they saw two Mocking birds in Swan Point cemetery, Providence, on December 1, 1912. Mr. Caduc states, "The birds appeared to be feeding on berries of some kind and were quite tame, allowing us to pass about 25 feet from them without taking flight. On many subsequent visits to the same spot I have failed to note them. But on January 11, 1920, in company with Miss Ida Jenkins, we came upon a single bird not far from where I had found the others. He was not as tame as they and flew as soon as he saw us, but we had a good view of him and could readily identify him. These birds were seen very near the main entrance to the cemetery."

A sixth record<sup>1</sup> is furnished by Mrs. Annie B. McConnell, who saw a Mockingbird on November 30, 1917, about her place at Watch Hill all the morning, and who states that she had seen the bird several times during the fall, but not close enough to be sure of its identity until the 30th.

Mr. Edward H. Perkins includes a Mockingbird in his Christmas bird census<sup>2</sup> 1917 for Kingston and Narragansett Pier, seen on December 24.

Dr. Windsor M. Tyler contributes the record of a Mockingbird seen by him at Saunderstown, R. I., on January 26, 1919.

Mr. Hathaway has obtained from Miss Elizabeth C. Dickens of Block Island, R. I., her records of the Mockingbirds seen there, which have been kindly transmitted to me. They are: three seen together on August 23, 1914, in the bushes and on the fence at the "Gull's Nest" one first seen on August 30, 1915, and seen on several

<sup>1</sup> Bird-Lore, XX, 2, 1918, p. 159.

<sup>2</sup> Bird-Lore, XX, 1, 1918, p. 28.

occasions later; one first seen on August 26, 1916, and repeatedly seen afterwards; one first seen on August 17 1917, and observed again on September 4; one seen on December 20, 1917, of which Miss Dickens states, "The children reported seeing it again the second week in January, 1918," and adds, "I have heard on good authority of one wintering here before;" one seen, December 23, 1918, the first record having been on September 17, of which, under date of February 4, 1919, it is stated, "This bird is wintering;" one seen on September 15, 1919; and in 1920, "One came to food put out by a High School girl at her home in the first week in February and kept on coming, and presumably the same bird is still here, for she has seen it every morning since in the nearby trees (March 13)."

A later letter states, "There seem to be two Mockingbirds, one at the home of the High School girl about a mile north from the Manisses Hotel, and one in the hotel trees, so the student reported on April 10." This second Mocker may have appeared in this neighborhood as a spring arrival and from no very distant locality.

These records of Miss Dickens are of unusual interest as showing how unfaillingly in the last six years the Mockingbird has visited Block Island in the fall migration, appearing in late August and in September, when birds resident farther north are moving south, and the records quite suggest such a movement on the part of more northern representatives of the Mockingbirds. In three of the last four years it has been found that an individual has remained for winter residence. Miss Dickens chronicles the arrival of but one presumable spring migrant Mockingbird and no summer resident Mockers, even the wintering birds of recent years failing to continue to be observed when spring has come? The records of Miss Dickens cover at least eleven different individuals, and quite possibly more, for she thinks that the early autumn arriving birds year by year may not have been identical with the later wintering birds; as there were not frequent and repeated observations of the respective individual birds throughout the fall season. And it may be that one or more of the wintering Mockers should be regarded as the same individual returning to the same locality for winter residence after a full summer absence. Miss Dickens does not offer testimony on this point. But other contributors of re-



cords in other localities have offered quite conclusive evidence that such as has been the case in several instances.

The later Rhode Island occurrences furnish one complete winter resident record of a pair which had nested in the previous summer, the female being noted up to February 8, or later, and the male continuing throughout the winter and spring; two other winter records, one of them of two birds seen on December 1, and the other of a single bird seen on January 11, in both instances indicating winter residents; a fourth record of a bird seen up to November 30; which would seem far too late a date for one intending migration south; and a fifth record as early in the spring as March 12, which on the other hand would seem to be far too early a date for migration north, unless it can be established that the Mockingbird is one of the earliest spring and one of the latest fall migrants, coming with the March arriving birds and not departing until the latest fall stragglers are leaving; the sixth record is of a male bird in April singing.

#### VERMONT

In a 'History of Vermont' by Zadock Thompson, 1842, a list of the birds of Vermont is given by orders, and the Mockingbird is not included.

In 'A Preliminary List of the Birds Found in Vermont' by George H. Perkins, Ph. D., Professor of Natural History in the University of Vermont, 1901, it is stated of the Mockingbird; "A rare visitor, and in 1884 a pair nested in Lunenburg, as a result of which they are now in the State collection [Montpelier]." Professor Perkins, under date of March 5, 1920, states "Mr. W. E. Balch told me that he saw the pair, which is in the Montpelier collection, when they appeared in the spring and kept watch of them till late summer, when he shot and mounted them for the State Collection." Prof. Perkins expresses his regret that he is not able to add to our knowledge of the occurrence of the Mockingbird in Vermont.

Dr. Lucretius H. Ross of Bennington writes me under date of February 25, 1920, "The Mockingbird is a rare bird in Vermont. On May 7, 1911, Charles Hitchcock reported seeing a single individual Mockingbird in the outskirts of Bennington village. The

next day I was fortunate enough to obtain a view of the bird. These two observations were the only ones I know of in this section of the State."

The only other record found for Vermont is a brief mention by W. P. Smith,<sup>1</sup> who writes, in reply to query for further information that a pair spent the season of 1919 at Wells River, and were frequently seen coming and going from a certain dense patch of shrubbery. The male was heard in song, though no nest was discovered, it seemed that the birds were breeding.

#### NEW HAMPSHIRE.

For New Hampshire, there are two published records:

An immature bird, apparently a young of the year, shot at Hampton, August 24, 1900, and recorded by Dearborn.<sup>2</sup>

A bird seen on the outskirts of Manchester, November 5, 1916, apparently accompany a flock of Robins, which stayed in the neighborhood two days, observed by Dr. William R. Varick, Mr. Lewis Dexter and others. Mr. Carick states, "It did not act like an escaped cage bird, and I have not seen a caged Mockingbird in this region for years."<sup>3</sup>

I have a third record from Mr. James P. Melzer of Milford, who states that on November 7, 1904, he shot a Mockingbird in that town. "I still have the bird, he writes, I have never seen one here before or since." Mr. Melzer is a taxidermist."

#### MAINE.

Knowledge is at hand of many occurrences in Maine. Ora W. Knight in his 'Birds of Maine', enumerates the County records as follows, though believing that most if not all of them were escaped cage-birds: Cumberland, "have one, an escaped cage-bird taken at Gorham, August 12, 1890" (Norton); one seen at Portland, January 19-Feb. 19, 1897 (Brown); Knox, "One taken in February" (Racktiff); "have one shot at Vinalhaven, February 1891, an escaped cage-bird" (Norton); Oxford, (Nash); Piscataquis, "one

<sup>1</sup> Bull. Bot. and Bird Clubs Vt., No. 6, Apr., 1920.

<sup>2</sup> Dearborn, Ned., Birds of Durham and Vicinity. Contr. Zool. Lab. N. H. Coll. Agric., No. 6, p. 94, 1903.

<sup>3</sup> Auk, XXXIV, 1917, p. 91.

shot in Monson, October 20, 1884, did not seem to have been a caged bird" (Homer); Washington, "One observed near Calais in 1870" (Boardman).

Mr. Nathan Clifford Brown<sup>1</sup> contributes to "The Auk" the record of a Mockingbird in Portland observed from January 19 to April 4, 1897, a period of eleven weeks. Mr. Brown states, "The bird appeared in a gutter which runs beneath the south window of my study. The thermometer was below zero, and there was no snow, but an unclouded sun had softened the ice in the gutter so that the bird could moisten his tongue; and this he seemed to be doing when I first saw him. He was, perhaps, five feet distant from my chair, and I noted at once that he looked like a wild bird, his ruffled plumage being in perfect condition, unfrayed and unstained. A heavy snow storm set in the next day. It was followed within the week by another. Wintry conditions prevailed generally up to January 29." On January 31 Mr. Brown again saw the bird, now on a neighbor's grounds. Mr. Brown further states that it was seen nearly every day, and "about three o'clock of the afternoon of February 11, the sun shining warmly in a still crisp air, he took up a position in the top of a tall elm before the same window from which I first saw him, and sang loudly for a few minutes." It is stated that, for a brief time following, the bird escaped notice, but on March 6 it was again observed, and following another considerable period of obscurity, it was once more seen by other observers on March 24 and 28. Mr. Brown states, "On neither of these occasions was he more than an eighth of a mile from the spot where he first appeared in January. Finally, on April 4, I met with him again myself, in the same section of the city as before. I walked within a few yards of him and watched him for several minutes, while he disputed with some Robins the right to a cluster of sumacs, the fruit of which had no doubt helped to carry him through the winter. Up to the present time (June 1). I have neither seen him or heard of him since."

The 'American Naturalist'<sup>2</sup> published the following note contributed by Mr. G. A. Boardman of Calais, "I found a Mockingbird,

<sup>1</sup> Auk 1897, pp. 224, 324.

<sup>2</sup> Amer. Naturalist, V, Apr. 1871, p. 121.

*Mimus polyglottos*, in the woods up the river this past season (1870?). This is the first time the bird has been found in Maine, to my knowledge, and I think it could not have been an escaped cage bird."

An extract<sup>1</sup> from the Journal of Captain Herbert L. Spinney, First Keeper Seguin Island Light, situated at the entrance of the Kennebec River, under date of September 17, 1896, the occurrence of a Mockingbird on the island, as follows, "During the day, I shot a Mockingbird (*Mimus polyglottos*, Linn.), which proved to be a male bird. It was very wary, and it was with much difficulty that I secured it. It did not show signs of having been caged, although it might have been. About the same date the preceding year, I am positive I saw a bird of the same species fly from the east side of the north cove across to the trees, but it eluded all my efforts to capture it, and I did not again see it."

Mr. Wm. L. Powers,<sup>2</sup> under "Some Notes from Gardiner" states "The Mocking bird (*Mimus polyglottus*, Linn.) is without doubt an occasional summer resident in the State of Maine. Some twenty or twenty-three years ago, [about 1885] a pair nested and reared their young in the town of Leeds. This fact is certified to by four individuals who had lived for some time in Louisiana, where these birds were very plentiful. One of these four people had lived in Louisiana twenty years, and Mockingbirds were as well known to him as Robins are to us. Mr. L. W. Robins of Randolph, Me., believes that a pair nested near his house last summer. He heard one singing nearly every morning for a month, and all indications pointed to nest building, although the nest could not be located. The singing ceased all at once, and it was feared the bird was shot. One thing, however, is certain, and that is that Horner Dill, of Gardner, Me., took a specimen near his home on the morning of December 14, 1906. The skin is now in my possession and has been examined by Mr. Norton, Curator of the Portland Society of Natural History." It is suggested that Mr. Robbins' experience may have been with a male Mockingbird only, if no female was seen and nest was not located. Records of other lone Mockingbirds singing freely point to this as not improbable.

<sup>1</sup> Journal Maine Ornith., Soc., V, Oct. 1903, pp. 54, 55.

<sup>2</sup> Journal Maine Ornith. Soc., IX, 2, 1907, p. 52.

The 'Journals of the Maine Ornithologists' Society', 1899 to 1911, contains these records of the Mockingbird. Mr. W. H. Brownson<sup>1</sup> in an article on "Birds in and around Portland in 1906" states, "April 27, there was a Mockingbird at South Portland, which attracted considerable attention from many observers. Probably this was an escaped cage bird, but there is no evidence one way or the other." The presumption expressed is interesting in the light of many subsequent occurrences, as indicating the earlier trend of thought when a Mockingbird was seen so far north. Again in 1907, Mr. Brownson<sup>2</sup> records, "On the 19th, [May], a Mockingbird was seen in South Portland and was under observation all day. Last year there was a Mockingbird in the same locality which remained there nearly a week. This year's bird was different from last year's, being smaller and browner in plumage. It has been the custom to declare that every Mockingbird seen in Maine is probably an escaped cage bird. From the fact, however, that a Mockingbird was seen last year at the height of the migration season, and this year at the same time, I am led to believe that these birds were really stragglers who had strayed north with migrating flocks." And Mr. Brownson states in an editorial on p. 48, "In the present number of the Journal are several notes relative to the Mockingbird in Maine. There seems very little doubt that this bird is beginning to find its way as a straggler into the State during the spring migrations, and there is some evidence of its breeding here. The instances of its occurrence in the State have been more frequent of late, and it seems quite certain that these cannot be referred, as formerly, to the category of escaped cage birds."

Miss Elizabeth W. Russell<sup>3</sup> under the caption "The Mockingbird Wintering at Portland, Maine," records the first appearance of the bird in a hedge December 15, 1908, "after a heavy fall of snow, followed by rain," and her observation of it for the second time on December 18, when "he flew to the hedge, close to our window and stayed there where I could study him at closer range for half an hour or more, and although it seemed incredible, I could

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<sup>1</sup> Journal Maine Ornith. Soc., VIII, 4, 1906, p. 85.

<sup>2</sup> Journal Maine Ornith. Soc., IX, 2, 1907, p. 51.

<sup>3</sup> Journal Maine Ornith. Soc., XIE, 1, 1910, pp. 8, 9.



not make him out anything but a Mockingbird." Later Miss Russell learned that this Mockingbird went daily for its food to the yard of a neighbor, who threw out crumbs for the English Sparrows, and it ate with the sparrows. The bird was again observed by Miss Russell on January 20, and February 7. On February 8, it is stated, this bird was heard singing; "his song then was low and sweet, but grew daily fuller and richer, and ten days later he was in full voice. It was his custom to give daily morning recitals from seven or a little later to ten or eleven. I did not hear of his singing in the afternoon at any time. He came safely through our severe winter. I last saw him on April 17th, having a lively scrap with a Robin. On May 4th, I heard him singing, but did not see him, and although I sought him in every possible place, I neither saw nor heard him again."

Mr. Clarence H. Clark<sup>1</sup> of Lubec in "Notes on Washington County Birds," states, "The most interesting thing of recent record is the occurrence of the Mockingbird in this vicinity. The first appearance was November 19, 1910, when one of the species was found in the village. At first it was thought that it might be an escaped bird, but later two were reported, and then a few days afterward three were seen together and were observed at several places within the radius of a mile. I closely and carefully observed them hours at a time on a score of occasions, and at times would get within the distance of a few feet from them. They spent most of their time in orchards and about dooryards, where many people threw out various things for them to eat. I never knew of them being here before, and I think their late occurrence remarkable. They have remained here all winter, and the last report was February 26th." Lubec is at the extreme eastern end of the coast of Maine near Eastport, in Washington County, and it is certainly remarkable that Mockingbirds should have wintered there near the forty-fifth parallel of latitude. Mr. Boardman's record already presented was in the same county forty years earlier and still farther north, above the forty-fifth parallel.

Another wintering Mockingbird in Portland,—ten years later—is briefly referred to in the Cumberland County Audubon Society

<sup>1</sup> Journal Maine Ornith. Soc., XIII, 1, 1911, p. 20.

report,<sup>2</sup> for 1917, it is stated, "On January 7, 1917, (?), Arthur H. Norton, the well known ornithologist of our own city, gave an illustrated talk on the Mockingbird that was wintering in one of our parks." I am informed that in one or more of the winters since the above mentioned occurrence a Mockingbird has wintered at South Portland. One of these is the subject of an editorial note in the 'Kennebec Journal' of February 28, 1920, a wintering bird.

Other records are supplied in a letter of Miss Bertha L. Brown of Bangor to Mr. E. P. Brown of Belfast, under date of March 31, 1919, from which I have their kind permission to quote. Miss Brown writes, "Most exciting of all to us here has been our Mockingbird who spent most of the winter here. I first discovered him Thanksgiving Day, November 28, 1918, and saw him many times afterwards in the same locality, as did many other of the bird students of Bangor. I saw him last on January 18. Since then I have received several reports from people who think they have seen him in other parts of the city. One report early in February was from a very reliable observer. You know there have been several winter records of them in Maine, but none before so far north as Bangor." Bangor is in almost precisely the same latitude as Lubec. Miss Brown, writing me under date of March 3, 1920, describes the locality which this Mockingbird so far north frequented, "as a little hill, called Summit Park, having an open, sunny hillside spotted with evergreen trees and occasional crabapple trees as well. Just beyond on a side slope of the same hill, is wild land, open pasture dotted with many evergreens. Also on the very top of the hill is a private residence with extensive grounds containing many trees. He seemed to make his headquarters in a couple of crabapple trees in the pasture. He fed on the apples. We did not hear him uttering any sound, except an occasional low chuck or chick. We saw him, almost daily in the vicinity of Summit Park from November 28, 1918, to January 17, 1919; twice also, December 12, and January 18, in another place, familiarly called Birch Hill, a half mile or more distant." Miss Brown adds, "I have heard of one other record of Mockingbird in this vicinity,

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<sup>2</sup> Bird-Lore, XX, 1, 1918, p. 89.

and that should be authentic. Mr. Walter Handy of Brewer, reports having seen one in Holden, a small town near Brewer, the fall previous, exact date. November 11, 1917."

Still another record is given me by Mrs. Charles W. Alexander, from Hallowell, Maine. On January 2, 1919, a Mockingbird appeared at her feeding shelf, attracted apparently by the suet, as well as by cut apples placed for its benefit. It came from one to six times a day until January 21, when it disappeared until February 25. This day it arrived at noon and sang beautifully, and continued until March 11 when it again disappeared. On March 26, it was discovered in a neighboring orchard where it remained until April 1, when its visit really ended. On the evening of June 24, however, it came to Mrs. Alexander's yard again momentarily and then disappeared. What was apparently this same bird was seen in the neighboring town of Winthrop on November 16, 1918. A final record of the series reaches me in a letter of Mrs. Augusta Gardner of Bucksport, to Mr. E. P. Brown, under date of January 29, 1920, concerning a Mockingbird which appeared here on November 17, 1919, and was seen daily until December 13, when it disappeared. It was attracted by the berries on various high-bush cranberries and by crab apples.

These are all quite remarkable records as showing how far north the Mockingbird occasionally undertakes to winter and how hardy and capable of enduring severe northern New England weather it is. It is also remarkable that the Brown records disclose the occurrence of but three spring Mockingbirds and but one occurred nesting, all the others being records of winter occurrences. Where these far northeastern birds summered is an entire mystery. May we not surmise that they have had a part in assured nestings and have contributed to the further representation of northern resident Mockingbirds? Mr. Knight in his 'Birds of Maine,' 1908, was skeptical and expressed the view, "Though specimens [of the Mockingbird] have been captured more or less often, nearly all show indications of being escaped cage birds." This view seems to have widely prevailed in earlier years, so that the presumption then was, when a Mockingbird was seen in New England, that it must be an escape. But clear testimony to the contrary presented time and time again has effaced this early presumption, and there

are now well based reasons for the other assumption, that unless a Mocker should unmistakably show the marks of captivity, it is to be regarded as a wild bird which never lived within the confines of a cage. It is significant that six of the occurrences which I have enumerated were observed in the years 1906 to 1911, and that five have been observed in the last four years, 1917 to 1920, indicating an apparent still further movement of the Mockingbirds northward along the coast and a renewed attempt to push the northern limit of its range beyond its earlier confines. The few scattered earlier occurrences of which we have knowledge, including those of Canada, which are next to be presented, cover a range of sixty years from 1860.

#### CANADA.

Our survey may be briefly extended to Canada for the few occurrences of Mockingbirds which have been recorded there. Dr. J. Dwight, Jr., enumerates five records. He states,<sup>1</sup> "A young Mockingbird taken in the fall of 1894 and sent to me from Sable Island, Nova Scotia, constitutes the fifth record of this species for Canada. The other four are so scattered and have been so often incompletely quoted, it seems worth while to review them here. They stand as follows: 1. Strathroy, Ontario. A single bird was seen in the town, but not captured, July 1, 1880. 2. Chatham, Ontario. In point of time, 1860, this is the first Mockingbird taken in Canada. Mr. Edwin W. Sandys, who originally furnished the record, was recently seen by the writer, and he tells me the bird was secured by his father and is now in a collection of stuffed birds made by him. It was seen perched on the ridge pole of a barn one June morning just after a warm southerly gale, and its rich song was what first drew attention to it. 3. Hamilton, Ontario. A pair of birds spent the summer of 1883 at East Hamilton. (McIlwraith) 4. Truro, N. S. A bird was wounded and caught alive July 1, 1889. It showed no signs of being an escaped cage bird. 5. Sable Island, N. S. This is a young bird in much worn first plumage, taken in the fall of 1894. I have been unable to obtain any information about the specimen except that it did not

<sup>1</sup> Auk, XIII, Oct., 1896, p. 344.

come to the island in a cage, and we can only assume it was carried thither by some resistless storm, perhaps, from the mainland or more likely from some far more southern home."

Dr. Dwight<sup>1</sup> later contributes one other Sable Island record, "A young male in juvenal plumage was captured September 3, 1902, 'hopping about a woodpile,' " and he states, "It is the second from Sable Island in this plumage."

And there is one later Ontario record, supplied by Mr. James H. Fleming of Toronto, who states,<sup>2</sup> "I took a male on May 20, 1906, at Point Pelee, Essex County, Ontario. The bird was found near an old orchard on the west side about five miles from the end of the point; the sexual organs were well developed. Mr. B. H. Swales and Mr. P. A. Taverner were with me when the bird was shot."

One other indefinite record is given in a 'Catalogue of Canadian Birds' by John Macoun and James W. Macoun, 1909, namely, "A specimen was picked up on Haymarket Square, St. John, N. B., by a seven year old boy, Ronald Singer, and through Mrs. M. V. Lawrence, brought to me (A. G. Leavitt)." The Hamilton record is presented by the Messrs. Macoun on the authority of McIlwraith as a nesting record, in 1883, based on the testimony that the male bird in song was frequently seen by Mr. Eastwood, in his horseback exercise in the early morning, during the breeding season and that a second bird, the female, was seen on one occasion by him. Mr. Fleming<sup>3</sup> in an article on "Birds of Toronto, Canada," places the Mockingbird in the Hypothetical List with this note, "The Hamilton record given by McIlwraith is not altogether satisfactory, and Mr. C. W. Nash, who was familiar with the time and place of the record is doubtful if the bird was correctly identified."

Mr. H. Mousley of Hatley, P. Q., writes me under date of March 8, 1920, "There is no such thing as the Mockingbird at Hatley, at least in my time; in fact it is rare anywhere in Canada." Mr. Mousley has very kindly consulted a list of books on the subject and finds in a 'Catalogue of the Birds of the Province of Quebec,' by C. E. Dionne, 1889, no reference to the Mockingbird, and in 'The Birds of Montreal' by Ernest J. Wintle, 1896, also no re-

<sup>1</sup> Auk, XX, 1903, p. 440.

<sup>2</sup> Auk, XXII, 1906, p. 344.

<sup>3</sup> Auk, XXIV, 1907, p. 88.



ference to the Mockingbirds. But he has found in "The Birds of the Province of Quebec," by C. E. Dionne, 1906, the following reference to the Mockingbird, on page 381, "M. C. J. Schmidt took a specimen on the 8th, of August, 1903, at Anticosti, and N. Cômeau states that he took one at Godhaut in the same summer; these are the only instances of its presence in our province." And in 'Birds of Eastern Canada' by C. A. Taverner, 1919, p. 206, Mr. Mousley finds this reference to the Mockingbird: "Distribution, southern United States north into Canada at the Western end of Lake Erie. This is the only locality where the species has obtained what approaches an established foothold in Canada. A few pairs have been known to summer there for the last decade. The species is rare in Canada."

So the testimony of these writers indicates that the northern representation of the Mockingbirds has extended somewhat into eastern Canada, especially at the western end of Lake Erie, where in recent years it has gained "what approaches an established foothold," although still "the species is rare in Canada."

#### SUMMARY.

Our review of the occurrences of the Mockingbird in New England, herein set forth, suggests these conclusions, based on our own records and those of other observers who have given me theirs, as well as on published records, namely that the species has a more established foothold now and in recent years than when its very casual presence was interpreted as "accidental" or "an escape"; that in the most recent years there is evidence that it is still pushing northward the limit of its range along the coast; that the northern representation has been maintained as much, if not more, by permanent residence as by migrants moving in, although the latter, year by year, doubtless have assisted in its maintenance and increase; that now, since the taking of breeding birds and their eggs has been almost entirely checked by protective laws and an educated public sentiment, there will be likely to be a more rapid increase of this northern representation of the species in New England; that it is entirely hardy and acclimated, as much so as our hardest permanent residents; that its survival in the rigors of winter is not dependent on aid rendered by human agency, much

as that may help, but that it is likely to suffer less than hardy ground-feeding birds, because it obtains its food from the berries of shrubs and vines and the frozen fruit on trees, especially apples, which are within its reach even in the time of deepest snows; that the many records of winter resident birds, far outnumbering those of spring, summer, and fall, indicate that there are probably many nestings which do not come under observation, in which young are raised, not a few, it may be, to remain as permanent residents and increase the northern representation; that these frequent fall and winter appearances of birds not observed during the summer are due probably to their seeking shelter and food in park and village shrubbery, where they readily come under observation; that they leave these wintering places for more retired haunts when the severity of winter has passed and conditions favor their release; that this movement may be greater or less in extent, amounting even to limited migration, but more likely northward than southward in conformity with the general trend of bird movement in the spring; and that thus they appear and disappear and sometimes re-appear, not remaining throughout the year within our observation and knowledge, except in the rare case of the celibate Arnold Arboretum Mockingbird.

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### THE NAME OF THE EASTERN HERMIT THRUSH.

BY OUTRAM BANGS AND THOMAS E. PENARD.

FROM the earliest times there has always been much confusion in the nomenclature of our American thrushes. It is, therefore, not strange to discover, even at this late date, some slight errors which have escaped notice and have persisted through so many years. But we should hardly have expected to find a serious error in the name of our common eastern Hermit Thrush which has received so much attention from investigators. This, however, is unfortunately the case.

In Tschudi's 'Fauna Peruana', Orn., 1845-1846, p. 187, Cabanis used the name *Turdus guttatus* for the Hermit Thrush. This was

not an independent name, but merely a new combination with *Turdus*, based on *Muscicapa guttata* Pallas. Cabanis, having examined Pallas' type, which he said was in the Berlin Museum, states very explicitly, "Ich habe desshalb den Pallas' schen Speciesnamen fur diese Art beibehalten, sowohl da er älter als der von Wilson gegebene 'solitarius,' als auch weil letzterer Name schon mehrfach anderweitig in demselben Genus vergeben ist."

Later Cabanis (Archiv fur Naturg., Jahrg. 13, Bd. 1, 1847, p. 205), considering the combination *Turdus guttatus* preoccupied, substituted *Turdus pallasii*, which is thus a pure synonym of *Muscicapa guttata* Pallas, and accordingly applies to the Alaskan, not the eastern, form of the Hermit Thrush. The latter should, therefore, have a new name.

The late Doctor Walter Faxon, who sometime ago called our attention to this error in nomenclature, had intended to make the correction. It is, therefore, very appropriate that we should name the eastern form of the Hermit Thrush—

***Hylocichla guttata faxoni* subsp. nov.**

*Type*.—Mus. Comp. Zool., 209370 adult ♂; Shelburne, N Hampshire; 19 July, 1884; William Brewster.

*Characters*.—Differs from *Hylocichla guttata guttata* (Pallas), and all other western forms, in having the sides and flanks buffy brown instead of grayish or olivaceous; the upper parts browner—more isabelline or cinnameous; bill relatively larger; tail relatively shorter.

*Measurements*.—Type, adult ♂: wing, 95 mm; tail, 67; tarsus, 30; exposed culmen, 14.

M. C. Z., 209371, topotype, adult ♀: wing, 89; tail, 62; tarsus, 29; exposed culmen, 13.

(For measurements, descriptions and details, concerning all the races of the species, see Ridgway, 'Birds of North and Middle America,' Pt. 4, 1907, pp. 39-48.)

*Remarks*. In the synonymy of this form we find two original names, both untenable,—*Turdus solitarius solitarius* Wilson (Amer. Orn., Vol. 5, 1812, p. 95) and *Turdus brunneus* "Gmel." Brewer (Journ. Boston Soc. Nat. Hist., Vol. 6, No. 3, 1852, p. 304). We have considered it better to accompany our new name with a diagnosis rather than to propose it as a substitute name for either of these as their history is so involved.

*Turdus solitarius* Wilson is preoccupied by *Turdus solitarius*

Linne, (Syst. Nat., 1758, Vol .1, p. 170= *Monticola solitarius solitarius* (Linn.). Wilson's first reference after the name, is to plate 43, fig. 2, in the same work. This plate represents *Hylocichla ustulata swainsonii* (Cabanis), but the description which follows undoubtedly applied to the Hermit Thrush. Wilson also refers to a specimen from the Peale Museum, No. 3542. There is in the Museum of Comparative Zoology a specimen from that source (cf. Faxon, Bull. M. C. Z., Vol. 59, No. 3, 1915, p. 147). This may be the subject of Wilson's description, but the original label has been destroyed and there is now no way of confirming this, since the plate, with which it might otherwise be compared, represents another species.

*Turdus brunneus* Brewer is preoccupied by *Turdus brunneus* Boddaert (Tab. Pl. Enl., 1783, p. 33, Pl. 556, Fig. 2.= *Euphagus carolinus* (Muller). Ridgway (Birds of North and Middle America, Pt. 4, 1907, p. 51, footnote) says, "The two species, *Hylocichla guttata pallasii* and *H. ustulata swainsonii* are, however, so inextricably involved in Doctor Brewer's article that it is difficult to understand which he would designate as "*Turdus brunneus* "Gmel." Instead of including the name under *H. u. swainsonii*, however, Ridgway (*loc. cit.*, p. 67) places it under *H. fuscescens fuscescens* (Stephens).

Both names, *Turdus solitarius* Wilson and *Turdus brunneus* Brewer, are thus of composite nature. A substitute name to replace either would possess the same infirmities and be open to serious objections. For this reason we have considered it best to propose an entirely independent name.

We are well aware that there is much feeling against apparently needless changes in the names of our common birds, especially of one so well known as our Hermit Thrush. It is not our purpose to discuss this phase of the question here, any more than to say that, in our opinion, the science of ornithology cannot lose, but must eventually gain, by any action, however trivial, that is founded on fundamentally sound principles.

We are indebted to Dr. Charles W. Richmond for his opinion in regard to the nomenclatural points involved.

## A REVIEW OF THE GRACKLES OF THE GENUS HOLOQUISCALUS.

BY JAMES L. PETERS.

THE Grackles of the genus *Holoquiscalus* comprise several closely related species and subspecies limited in their distribution to certain islands in the West Indies and the Caribbean coast of South America.

It has always been customary to treat each one of these insular forms specifically, but I believe that the group falls naturally into four species, each with one or more geographic races, as I shall shortly endeavor to demonstrate.

The genus is not represented in the Bahamas; and there is a considerable gap in its distribution including the Virgin Islands and extending southward into the Lesser Antilles until Guadeloupe is reached; and for some inexplicable reason no representative is found on Dominica.

The Museum of Comparison Zoology is very fortunate in the quantity and quality of its West Indian material, and consequently it has not been necessary to draw on other institutions for loan of skins except to borrow a single specimen of the female of *Holoquiscalus insularis* (Richmond) from the U. S. National Museum. It has not been possible to borrow any skins of *H. orquillensis* nor have the types of *H. mexicanus* or *H. rectirostris* been seen by me.

Thanks are due to Dr. C. W. Richmond, Asso. Curator of Birds, U. S. National Museum for the loan of a female of *Holoquiscalus l. insularis*, and to Mr. T. E. Penard for verifying several references and for calling my attention to several others.

### Genus *Holoquiscalus* Cassin.

*Holoquiscalus* was proposed by Cassin (Proc. Acad. Nat. Sci. Phila, 1866, 404) as a subgenus to include the following species at that time included in *Quiscalus*, *Q. baritus*, *Q. niger*, *Q. inflexirostris* and *Q. lugubris*. At the same time he described two other species known only from the type specimens still in the collection of the Academy of Natural Sciences of Philadelphia, viz: *Q. mexicanus* and *Q. rectirostris*.



Gray in the 'Handlist of Birds of the British Museum' (Vol. II, 1870, p. 38) followed Cassin, so did Sclater in the 'Catalogue of Birds of the British, Museum' (Vol. XI, 1886, p. 394).

Ridgway in 1901 (Proc. Wash. Acad. Nat. Sci. Apr. 15, 1901, p. 151) elevated the subgenus to full generic rank and as such it has been recognized by most writers since that time, although many European ornithologists still cling to *Quiscalus* for this group.

*Holoquiscalus* is a remarkably even genus as far as external characters show. There is more or less variation in the shape of the bill, but nothing sufficiently great to warrant the creation of even sub-genera. In two species the females are different from the males in color, the young males passing through the plumage of the female before assuming that of the adult.

The shape of the palatal keel shows some variation; the general type exhibited is that of a compressed median ridge lowering posteriorly, there becoming broad, rounded, but sharper anteriorly. It is in the height of the anterior portion and in the angle there formed with the palate that any variation occurs. Suitable alcoholic material is necessary however, to determine the variation in the different forms.

Nearly all authors speak of the peculiar shape of the tail in flight; it is expanded vertically to a depth of three or four inches. I am rather inclined to believe that this plication may be permanent in all the species; from experience with birds in the flesh I know it to be so in *H. j. gundlachii* and *H. n. niger*.

A key to the species and subspecies does not bring out the relationships, and for this reason the following diagnosis is appended to make clear my point.

*Holoquiscalus jamaicensis* and subspecies. Moderate sized Quiscalinae the body brilliant glossy violet black or steel blue; females similar to the males but smaller, gloss less brilliant but present.

*Holoquiscalus niger* and subspecies. Averaging smaller than *H. jamaicensis*; the body glossy black; females similar but smaller and duller.

*Holoquiscalus lugubris* and subspecies. Rather small Quiscalinae, the males resembling *H. jamaicensis* in color; females dark smokey brown above, lighter below, becoming almost white on the throat.

*Holoquiscalus fortirostris* and subspecies. Males similar to the corresponding sex of *H. lugubris* but smaller; females similar to the males but smaller, the metallic gloss much duller and washed with deep sooty brown.

***Holoquiscalus jamaicensis jamaicensis*, (DAUDIN).**

- Monedula tota nigra* SLOAN, Jamaica 2, p. 299, pl. 257, f. 2, 1725.  
*Merops niger, iride subargentea*, BROWN, Jamaica, p. 476, 1756.  
*Pica jamaicensis*, BRISSON, Orn., 2, p. 41, 1760.  
 Boat-tailed Grackle, LATHAM, Syn. 1, 2, p. 460, n. 5, t. 18, 1782.  
 [Gracula] *barita*, LINN., Syst. Nat. ed. 12, 1, p. 165, 1766.—GMEL, Syst. Nat. 1, 1788, p. 396.—WAGLER, Syst. Av., 1827.  
*Quiscalus baritus*, VIEILLOT, Nouv. Dict. d'Hist. Nat. 28, 1819, p. 487.—CASSIN, Proc. Acad. Nat. Sci., Phila., p. 405, 1866.  
 [Quiscalus] *baritus*. BONAPARTE, Consp. Av. 1, 1850 p. 425.—GRAY H. L., Birds Br. Mus. 2, 1870, p. 38.  
 [Quiscalus *baritus*] var. *baritus*, BAIRD, BREWER & RIDGWAY Hist. N. Am. Bird. 2, 1874, p. 213.  
*Sturnus barita*, DAUDIN, Traité d'Orn., 2, 1800, p. 320.  
*Sturnus jamaicensis*, DAUDIN, Traité d'Orn. 2, 1800, p. 317.  
*Quiscalus crassirostris*, SWAINSON, Anim. in Menag, 1838. p. 355.  
 GOSSE, Birds Jan., 1847, p. 217; Ills. Birds Jan., 1849, pl. 53.—SCLATER Cat. of Am. Birds, 1862 p. 359.—ALBRECHT, J. & O., 1862, p. 197.—MARCH, Proc. Acad. Nat. Sci., Phila., 1863, p. 298.—SCLATER, Ibis, 1884, p. 159; Cat. Birds Br. Mus. 11, 1886, p. 398.—CORY, Auk, 3, 1886, p. 225; Birds of the W. I., 1889, p. 111; Cat. W. I. Birds, 1892, p. 15, 111, 130.—SCOTT, Auk, 10, 1893, p. 179.—FIELD, Auk, 11, 1894, p. 126.—NICOLL, Ibis, 8th ser. 4, 1904, p. 577.—MAYNARD, Birds of the W. I., 1901, p. 19.—SCLATER, Handbook of Jamaica, 1910 (Reprinted, p. 2).  
 [Quiscalus] *crassirostris*, BONAPARTE, Consp. Av. 1, 1850, p. 425.—GRAY, Gen. Birds, 1845, p. 341; (A. & E.) NEWTON, Handbook Jam., 1881, p. 103.  
 [Quiscalus] *crassirostris* SCLATER & SALVIN, Nom. Av. Neo., 1873, p. 38.—CORY, Birds of the W. I., 1885, p. 14; do, rev. ed., 1886, p. 14.  
 [Quiscalus] *vulgaris* TEMMINCK, Table Méth., 1838, 10.  
*Scaphedurus] crassirostris* BONAPARTE, Consp. Av. 1, 1850, p. 426.  
*Holoquiscalus jamaicensis* RIDGWAY, Proc. Wash. Acad. Sci. 3, Apr. 15, 1901, p. 151; Birds of N. & M. Am. (Bull 50, U. S. N. M.) 2, 1902, p. 227.—SHARPE, H. L. of Birds, 5, 1909, p. 509.  
*Holoquiscalus jamaicensis jamaicensis* TODD, Ann. Carn. Mus. 10, Jan. 31, 1916, 280.—BANGS & KENNARD, Handbook of Jamaica, 1920.  
*Description*.—Adult male: above and below glossy violet black, the abdomen and upper and lower tail coverts inclining to steely blue, shading into greenish at the tips; wing coverts bronze-green, the lesser series

tipped with steel-blue or purplish; upper surface of the quills glossed with greenish bronze, particularly on the secondaries; under surface of quills dull black; shafts black. Wing, 146.5–151 mm. (148.8); tail, 135.5–143 mm. (136.67); bill (from base), 31.5–34.5 mm. (33.66).

Adult female: Similar to the male but smaller, the violaceous gloss less brilliant and frequently with a distinct steel-blue suffusion; rump and upper tail coverts usually with this color predominating; abdomen dull black. Wing, 124–133 mm.; tail, 115–130 mm.; bill (from base), 29–30.5. Bill and feet black; iris "cream-white" (Gosse).

*Type locality*.—Jamaica.

*Range*.—Island of Jamaica, West Indies.

*Material*.—Eighteen skins, all adults, 11 males and 7 females, all in the Museum of Comparative Zoology.

*Remarks*. The history of this form goes back to the first half of the 18th century. As early as 1725 Sir Hans Sloan describes and figures<sup>1</sup> a bird presumably of this species, but as his description is insufficient and his figure barely recognizable as that of a bird his species cannot be identified with any degree of certainty. Dr. Patrick Brown in his account of Jamaica<sup>2</sup> furnishes a somewhat meagre, albeit quite recognizable description of the form now under consideration under the caption, of "*Merops niger, iride subargentea*." Brisson bases his *Pica jamaicensis* on Brown. [*Gracula*] *barita* of the 10th edition of Linnaeus is founded on Rolander, no references are given and there are several discrepancies in the description. Whatever the bird of the 10th edition may be it is not the Jamaican bird and should not be included in its synonymy. In the 12th edition however references are given to Sloan and to *Icterus niger* of Brisson, completely changing the status of the name "*barita*."

The name which this species now bears was given by Daudin in 1800, based on Brown's "*Merops niger, iride subargentea*," a name however which was not generally used until set up by Ridgway (Proc. Wash. Acad. Sci. 3, Apr. 15, 1901, p. 151) the name *crassirostris* given by Swainson in 1838, (Anim. Menag. p. 355) having been in general use by most authors up to 1901.

<sup>1</sup> A voyage to the islands of Madeira, Barbadoes, Nieves, St. Christopher and Jamaica with the Natural History of the herbs and trees, four-footed beasts, fishes, birds, insects, etc. of the last of these islands, Sloan H., 1707. London

<sup>2</sup> The Civil and Natural History of Jamaica, Brown, Patrick, 1756, London.

***Holoquiscalus jamaicensis gundlachii* (CASSIN)**

- Quiscalus versicolor* (not of Vieillot) VIGORS,<sup>1</sup> Zool. Journ. **3**, no. 11, 1827, 442.
- Q[uis]calus versicolor* (not of Vieillot) LEMBEYE,<sup>1</sup> Aves de la Isla de Cuba, 1850, 131.
- Quiscalus barytus* (not *Gracula barita* Linn.) D'ORBIGNY<sup>1</sup> in La Sagras Hist. Nat. De Cuba, Ois. 1839, 120, pl. 18<sup>2</sup>.
- Quiscalus baritus* (not *Gracula barita* Linn.) THIENEMAN.<sup>1</sup> J. f. O. 1857 151.
- Q[uis]calus Barytus* (not of Linn.) LEMBEYE,<sup>1</sup> Aves de la Isla de Cuba, 1850, 131.
- Chalcophanes baritus* (not of Linn.) GUNDLACH<sup>1</sup>, J. f. O., 1856, 15.
- Ch[alcophanes] baritus* CABANIS,<sup>1</sup> Mus. Hein. **1**, Sept., 1851, 197 (excl. syn.)
- Calcophanes baritus* (not of Linn.) BREWER,<sup>1</sup> Proc. Bost. Soc. Nat. Hist., 1860, 307.
- Quiscalus gundlachii* CASSIN, Proc. Acad. Nat. Sci., Phila., 1866, 406.—CORY,<sup>1</sup> Auk **3**, 1886, 226.—SCLATER,<sup>1</sup> Cat. Birds Br. Mus. **11**, 1886, 398.—CORY, Birds of the W. I.<sup>1</sup>, 1889, 113; Cat. W. I. Birds,<sup>1</sup> 1892, 15, 111, 129, 147.—STONE, Proc. Acad. Nat. Sci., Phila., 1899, 35.—MAYNARD,<sup>1</sup> Cat. Birds W. I., 1903, 19.
- [Quiscalus gundlachii [=ii]]* GUNDLACH,<sup>1</sup> Orn. Cub., 1895, 124.
- [Quiscalus] gundlachii* GRAY,<sup>1</sup> H. L. **2**, 1870, 38, no. 6257.
- [Quiscalus baritus]* var. *Gundlachi*, BAIRD, BREWER & RIDGWAY,<sup>1</sup> Hist. No. Am. Birds, **2**, 1874, 213.
- [Quiscalus] gundlachi*, CORY, Birds of the W. I., 1885, 14<sup>1</sup> (rev. ed., 1886, 14<sup>1</sup>).
- Quiscalus gundlachi* SCLATER,<sup>1</sup> Ibis, 1884, 159.—CHAPMAN, Bull. Am. Mus. Nat. Hist., 1892, 306 (Trinidad, Cuba).
- Chalcophanes gundlachii* GUNDLACH,<sup>1</sup> J. f. O. 1874, 135; Orn. Cub.<sup>1</sup>, 1876, 102.
- [Chalcophanes] gundlachii* GUNDLACH,<sup>1</sup> Sup. Orn. Cub., 1876, 270.
- Holoquiscalus gundlachii* RIDGWAY,<sup>1</sup> Proc. Wash. Acad. Sci. **3**, April 15, 1901, 151; Birds No. & Mid. Am.<sup>1</sup> **2**, 1902, 224, 226, part (Cuba).
- Holoquiscalus gundlachi* MENEGAUX,<sup>1</sup> Bull. Mus. Nat. de France, 1909, 237.—SHARPE,<sup>1</sup> H.-L. of Birds, 1909, 509, part (Cuba).
- Holoquiscalus jamaicensis gundlachii* TODD, Ann. Carn. Mus. **10**, nos. 1 & 2, Jan. 31, 1916, 280.

*Description*.—Adult male: Similar to *H. j. jamaicensis*, but violaceous gloss somewhat more in extent and extending farther on the underparts. Slightly smaller, bill longer and more slender. Wing, 144–155 mm. (147.5); tail, 132.5–143 mm. (136.1); bill (from base), 34–37.5 mm. (36). Adult female: Similar to the male but smaller; gloss less brilliant and

<sup>1</sup> These references may refer either to *H. j. gundlachii* or to *H. j. caribaeus*.

<sup>2</sup> This plate is not certainly identifiable.

inclining to steel blue. Wing, 124.5–132 mm. (127.9); tail, 118–129 mm. (121.9); bill (from base), 29–31 mm. (30.6).

The female of this species may be distinguished from that of the preceding by smaller size, and longer and more slender bill. Bill, legs and feet, black; iris, yellow.

*Type locality*.—Eastern Cuba.

*Range*.—Eastern Cuba (Nipe Bay Region,<sup>1</sup> Holquin,<sup>2</sup> Guantanamo,<sup>3</sup> Guanaja,<sup>2</sup> Baracoa<sup>2</sup>) and Central Cuba (Remedios<sup>1</sup> & Trinidad<sup>2</sup>).

*Material*.—20 specimens, 11 males, 9 females, all in Museum of Comparative Zoology.

*Remarks*. There are very few references in literature to Gundlach's Grackle prior to 1866 when Cassin described it as distinct and all these references were either to *Quiscalus versicolor* of Vieillot (= *Quiscalus quiscula* subsp?) or to *Quiscalus baritus* (= *Gracula barita* Linn.) a blanket name for all birds of this genus (*Holoquiscalus*) but which has no applicability whatever to birds from Cuba.

In 1916 Todd described as subspecifically distinct the bird from western Cuba and the Isle of Pines and in his paper determined the type locality of *gundlachii* to be eastern Cuba.

Intergradation between the eastern and western races is perfect; a male from eastern Cuba approaches *caribaeus* and two males from western Cuba approach *gundlachii*.

#### ***Holoquiscalus jamaicensis caribaeus* (TODD)**

*Quiscalus versicolor* (not of Vieillot) VIGORS,<sup>3</sup> Zool. Journ. 3, no. 11, 1827, 442.

*Q[uisca]lus versicolor* (not of Vieillot) LEMBEYE,<sup>3</sup> Av. de l' Isl. de Cuba, 1850, 131.

*Quiscalus barytus* (not *Gracula barita* Linn.) D'ORBIGNY<sup>3</sup> in La Sagra's Hist. Nat. Cuba Ois., 1839, 120, pl. 18<sup>4</sup>; Poey in Hist. Nat. de Cuba, pt. 38, June, 1854, 426–427 (Isle of Pines).

*Quiscalus baritus* (not *Gracula barita* Linn.) THIENEMANN,<sup>3</sup> J. f. O., 1857, 151.

*Q[uisca]lus Barytus* (not *Gracula barita* Linn.) LEMBEYE,<sup>3</sup> Ave d. l. Isla de Cuba, 1850, 131.

*Chalcophanes baritus* (not *Gracula barita* Linn.) GUNDLACH,<sup>3</sup> J. f. O., 1856, 15.

*Ch[alcophanes] baritus* CABANIS,<sup>3</sup> Mus. Hein. J, Sept., 1851, 197 (excl. syn.)

<sup>1</sup> Specimens from these localities in M. C. Z.

<sup>2</sup> Todd, Am. Cam. Mus. 10, no. 1 & 2, 1916, 278.

<sup>3</sup> References so marked may refer either to *H. j. gundlachii* or to *H. j. caribaeus*.

<sup>4</sup> This plate is not certainly identifiable.



- Calcophanes baritus* BREWER,<sup>1</sup> Proc. B. S. N. H. 7, 1860, 307.
- Quiscalus gundlachii* CORY,<sup>1</sup> Auk 3, 1886, 226.—SCLATER,<sup>1</sup> Cat. Bird Br. Mus., 11, 1886, 398.—CORY,<sup>1</sup> Birds of the W. I., 1889, 113; Cat. W. I. Birds,<sup>1</sup> 1892, 15, 111, 129, 147 part (Cuba).—GUNDLACH,<sup>1</sup> Orn. Cub., 1895, 124.—MAYNARD,<sup>1</sup> Cat. Birds W. I., 1903, 19.
- [*Quiscalus*] *gundlachii*, GRAY<sup>1</sup> H. L. 2, 1870, 38, no. 6257.
- [*Quiscalus baritus*] var. *gundlachi* BAIRD, BREWER & RIDGWAY,<sup>1</sup> Hist. N. Am. Birds, 2, 1874, 213.
- [*Quiscalus*] *gundlachi* CORY,<sup>1</sup> Birds of the W. I., 1885, 14 (do' rev. ed., 1886, 14).
- Quiscalus gundlachi*<sup>1</sup> SCLATER, Ibis, 1884, 159.
- Chalcophanes gundlachii*<sup>1</sup> GUNDLACH, J. f. O., 1874, 135; Orn. Cub.<sup>1</sup>, 1876, 102.
- Holoquiscalus gundlachii* RIDGWAY,<sup>1</sup> Proc. Wash. Acad. Sci 3. Apr. 15, 1901, 151; Birds, N & M. Am. 2, 1902, 227 part (Cuba).
- Holoquiscalus gundlachii* (not of Cassin) BANGS & ZAPPEY, Am. Nat. 39, 1905, 211 (Isle of Pines).
- Holoquiscalus Gundlachi* MENEGAUX,<sup>1</sup> Bull. Mus. Nat. de France, 1909, 237.
- Holoquiscalus gundlachi* SHARPE,<sup>1</sup> H.-L. of Birds, 1909, 509, part (Cuba & Isle of Pines).
- Holoquiscalus caymanensis dispar* (not of Clark!) TODD, Ann. Carn. Mus. 10, nos. 1 & 2, Jan. 31, 1916, 276.
- Holoquiscalus caymanensis caribaeus* TODD, do, erratum insert opp. p. 276, nom. nov. for *dispar* preoccupied.
- Description*.—Adult male: Similar to *H. j. gundlachii*, but smaller; the gloss with steel blue sheen predominating; in some specimens all trace of violaceous is lacking.
- Wing, 137–146 (140.5) mm.; tail, 121–136 (127.8) mm.; culmen (from base of forehead), 32.5–37 (34.55) mm. Adult female: similar to the male but smaller and less brilliantly glossed. Differs from the female of the foregoing in being smaller and with steel blue gloss much more pronounced.
- Wing, 122–128 (125.25) mm.; tail, 109.5–116.5 (112.75) mm.; culmen (from base of forehead), 29.5–31.5 (30.7) mm. Bill, legs and feet black. Iris cream (Zappey, on label).
- Type locality*.—Nueva Gerona, Isle of Pines.
- Range*.—Western Cuba (Bolandron, Cojimar, Pinar del Rio, Marianao, El Guama) and Isle of Pines.
- Material*.—25 skins, 16 males and 9 females, all in Museum of Comparative Zoology.
- Remarks*.—Although Bangs and Zappey (Am. Nat. 39, 1905, 211) pointed out some differences between the Isle of Pines and

<sup>1</sup> References so marked may refer either to *H. j. gundlachii* or to *H. j. caribaeus*.

Cuban grackles, the true status of the relationships was not made clear until established by Todd (Ann. Carn. Mus. 10, 1 & 2, 1916, 276.) a few years ago. The large violet-shaded males of eastern Cuba are recognizable at a glance from the steel-blue birds from western Cuba and the Isle of Pines. The difference between the females is less striking but nevertheless quite pronounced.

There are very few cases in the literature that can be definitely linked up with either race; most of them refer merely to "Cuba" and such references must be quoted in the synonymy of both races with a query. Only when the reference is contained in a local list can the identity of a particular form be definitely established.

***Holoquiscalus jamaicensis bangsi*, subsp. nov**

*Quiscalus gundlachi* (not of Cassin) CORY, Auk 6, 1889, 31. (Cayman Brac).—NICOLL, Ibis, 8th ser., 4, 1904, 587.

*Quiscalus gundlachi* CORY, Cat. Birds of the W. I., 1892, 111, 147 (Excl. Cuba).

*Holoquiscalus gundlachii* RIDGWAY, Birds of N. & M. Am. 2, 1902, 226 (excl. Cuba and Isle of Pines).

*Holoquiscalus gundlachi* LOWE, Ibis, 9th ser., 5, 1911, p. 161.

*Holoquiscalus caymanensis caribaeus* (not of Todd) BANGS, Bull. M. C. Z. 60, no. 7, March, 1916, 317.

*Type*.—No. 68025, Museum of Comparative Zoology, adult male, Cayman Brac, West Indies, collected June 28, 1911, by W. W. Brown, Jr.

*Subspecific characters*.—Similar to *H. j. jamaicensis* (Daudin) but smaller; bill longer and fully as stout; violaceous gloss less brilliant, the steel blue tinge on the abdomen extending to the lower breast; throat faintly washed with blue; upper parts with an almost imperceptible bluish tinge.

*Measurements* (in millimeters).—

No. M.C.Z.	Sex	Locality	Wing	Tail	Culmen (from base of forehead)
68025	♂	Cayman Brac.	147	130	35.
68024	♂	" "	143	127	35
68023	♂	" "	147	134	36
36484	♂	Little Cayman	141	126	39
68014	♂	Little Cayman	145	135.	34
68017	♂	" "	146.5	135.5	33
68018	♂	" "	144.5	130.	35.5
Average		7 adult males	145.	130.95	35.35

No. M. C. Z.	Sex	Locality	Wing	Tail	Culmen (from base of forehead)
36483	♀	Cayman Brac.	121	109	31
68028	♀	" "	129	112	31
68029	♀	" "	125	118.5	31
68030	♀	" "	121	109	31
68020	♀	Little Cayman	128	123	32
68021	♀	" "	124	110.5	30.5
68022	♀	" "	124	118.5	31
72097	♀	" "	118	107	31.5
Average			124.8	113.43	31.12
8 adult females					

Females are similar to the males but very faintly glossed, often with a brownish wash on the under-parts and a trace of greenish bronze on the forehead. Bill, feet, and legs black.

*Range*.—Islands of Little Cayman and Cayman Brac, W. I.

*Material*.—Eighteen specimens; 10 males and 8 females, all in the Museum of Comparative Zoology.

*Remarks*.—Grackles from these two islands have until quite recently been referred to *gundlachii*. When Bangs was working up a collection of birds made in the Caymans by W. W. Brown he noticed the difference in birds from Little Cayman and Cayman Brac and had the species in manuscript when Todd's paper on the birds of the Isle of Pines came out. At the time he was correcting the proof of his paper and having no time to look into the matter, provisionally referred his bird to the Isle of Pines Grackle.

#### ***Holoquiscalus jamaicensis caymanensis* (CORY)**

*Quiscalus caymanensis* CORY, Auk, 3 1886, 499, 502.—RIDGWAY, Proc. U. S. Nat. Mus. 10, 1887, 574.—CORY, Auk, 5, 1888, 158; Birds of the W. I., 1889, 291; Cat. W. I. Birds, 1892, 15, 111, 129, 147.—MAYNARD Cat. Birds of the W. I., Dec. 1, 1903, 19.—NICOLL, Ibis, 8th Ser., 4, 1904, 581.

*Holoquiscalus caymanensis* RIDGWAY, Proc. Wash. Acad. Sci., 3, Apr. 15, 1901, 151; Birds of N. & M. America, 2, 1902, 224, 229.—SHARPE H. L. of Birds, 5, 1909, 510.—LOWE, Ibis, 9th Ser., 3, 1909, 347, 5, 1911, 143, 161.

*Holoquiscalus caymanensis caymanensis* TODD, Ann. Carn. Mus. 10, nos. 1 & 2, Jan. 31, 1916, 277, 280, Bangs, Bull. M. C. Z. 60, No. 7, March 1916, 317.

*Description*.—Adult male: Similar to *H. j. caribaeus* but much smaller, the bluish gloss with a purplish tinge.

Wing, 128–136 (130) mm.; tail, 112.5–118 (116.4) mm.; culmen (from base of forehead), 31–34 (32.87) mm.

Adult female: Similar to the male but smaller and duller colored, underparts washed with brown. Wing, 114.5 mm.; tail, 99.5 mm.; culmen (from base of forehead), 28.5 mm. Bill, legs, and feet black; iris yellow (Richardson on label).

*Type locality*.—Island of Grand Cayman, W. I.

*Range*.—The same.

*Material*.—6 specimens, 4 adult and 1 young male, 1 adult female, all in the collection of the Museum of Comparative Zoology.

*Remarks*.—The Great Cayman Grackle is the smallest of any of the Greater Antillean forms and this character combined with a very slender bill serve at once to identify it.

#### **Holoquiscalus niger niger (BODDAERT)**

*Icterus niger* BRISSON, Ois. 2, 1760, 103 (Excl. pl. & fig.).—Le Troupiale noir, Buffon, Hist. Nat. des Ois. 3 (excl. refs. to Jamaica).

*Oriolus niger* BODDAERT, Table. Pl. Elumn. 1783, 31 (based on Le Troupiale noir de St. Domingue, Daubenton Pl. enl. pl. 534).—LATHAM, Ind. Orn. 1, 1790, 185.

*Icterus niger* TEMMINCK, Cat. Syst., 1807, 48.

*Algelaius* *niger* VIEILLLOT, Enc. Meth. 2, 1823, 718.

*Quiscalus niger* CASSIN, Proc. Acad. Nat. Sci., Phila., 1866, 407.—SCLATER, Ibis, 1884, 159; Cat. Birds Br. Mus. 11, 1886, 398.—CORY, Birds of Haiti & San. Dom., 1885, 73, pl. 22, f. 1; Auk, 3, 1886, 226; Birds of the W. I., 1889, 113; Cat. W. I. Birds, 1892, 15, 111, 131.—CHERRIE, Field Col. Mus. Orn. Series 1, 1896, 17.—MAYNARD, Birds of the W. I., 1903, 20; A. E. & A. H. VERRILL, Proc. Acad. Nat. Sci., Phila. 61 1909, 362.

[*Quiscalus*] *niger* GRAY, H.-L., 2, 1870, 38, no. 6529.—CORY, Birds of the W. I., 1885, p. 14; do, rev. ed. 1886, 14.

[*Quiscalus baritus*] var. *niger* BAIRD, BREWER & RIDGWAY, Hist. No. Am. Birds, 2, 1874, 213.

*Holoquiscalus niger* RIDGWAY, Proc. Wash. Acad. Sci., Apr. 15, 1901, 151; Birds No. & Mid. Am. 2, 1902, 225, 228.—SHARPE, H.-L. 5, 1909, 509.—PETERS, Bull. M. C. Z. 61, no. 11, Oct., 1917, 424.

*Holoquiscalus niger niger* TODD, Ann. Carn. Mus. 10, nos. 1 & 2, Jan. 31, 1916, 280.

*Quiscalus ater* "Baird" BRYANT, Proc. Bost. Soc. Nat. Hist. 11, 1866, 94.—CORY Bull. N. O. C., 6, 1881, 153.—TRISTRAM, Ibis, 1884, 168.

*Quiscalus barita* "Gm" Selater, P. Z. S. 1857, 232.

*Quiscalur* sp? A. E. & A. H. Berrill, Proc. Acad. Nat. Sci. Phila., 61, 1909, 362.

*Description*.—Adult male: uniform glossy black strongly washed on the rump and upper tail coverts with violaceous; retrices and secondaries externally glossed with dark greenish bronze. Wing, 126–142 (130.8) mm.; tail, 111–127.5 (118.6) mm.; culmen (from base of forehead), 31.5–34 (32.5) mm.

Adult female: similar to the male but smaller. Wing, 113.5–119.5 (118.2) mm. tail, 103–112 (107.4) mm.; culmen (from base of forehead), 29–31 (29.7) mm. Bill, legs and feet black; iris lemon yellow.

*Type locality*.—Island of Haiti. There can be little doubt that the original specimen which served as Daubenton's model for his plate of Le Troupiale Noir de St. Domingue came from the western end of the Island which at that time was a French colony. I, therefore, designate Port au Prince, Republic of Haiti, as the type locality of *Holoquiscalus niger niger*.

*Range*.—Island of Haiti (Republics of Haiti and Santo Domingo), Islands of Gonave (?) and Tortuga (?).

*Material*.—Eighteen adults, nine males and nine females, all in the collection of the Museum of Comparative Zoology.

*Remarks*.—The Haitian Grackle is the smallest of any of the Greater Antillean forms. The strong violaceous or bluish gloss of *H. jamaicensis* and its allies is lacking; the bill moderate and almost straight. Early writers confused this species with the Jamaica bird. Brisson's *Icterus niger* is given as inhabiting "St. Domingue et Jamaica;" whatever his description may refer to his plate is almost certainly the stout billed Jamaican Grackle. Buffon likewise attributes the species to Haiti and Jamaica, adding to his text under the Troupiale noir that this bird is the same as *Icterus niger* of Brisson.

#### ***Holoquiscalus niger brachypterus* (CASSIN)**

*Quiscalus baritus* (not *Gracula barita* Linn.) TAYLOR, Ibis, 1864, 168 (part).

*Quiscalus crassirostris* (not of Swainson) BRYANT, Proc. B. S. N. H. 10, 1866, 254.—GUNDLACH, J. f. O., 1866, 188.—SUNDEVALL, Öfv. K. Vet-Akad. Förh. Stock. 1869, 598.

*Quiscalus brachypterus* CASSIN, Proc. Acad. Nat. Sci. Phila., 18, 1866, 406.—SCLATER, Ibis, 1884, 160; Cat. Birds Br. Mus., 11, 1886, 399.—CORY, Auk, 3, 1886, 224; Birds of the W. I., 1889, 111; Cat. Birds of the W. I. 1892, 15, 111, 132.—MAYNARD, Cat. Birds of the W. I., 1903, 19.—BOWDISH, Auk, 19, 1903, 12.

[*Quiscalus*] *brachypterus* GRAY, H.-L. 2, 1870, 38, no. 6528.—CORY, List of the Birds of the W. I., 1885, 14; rev. ed., 1886, 14.—SCLATER & SALVIN, Nom. Av. Neo., 1873, 38.

[*Quiscalus baritus*] var. *brachypterus* BAIRD, BREWER & RIDGWAY, Hist. No. Am. Birds, 2, 1874, 213.



*Chalcophanes brachypterus* GUNDLACH, J. f. O., 1874, 312; 1878, 177; Anal Soc. Esp. Hist. Nat. 7, 1878, 213.

*Holoquiscalus brachypterus* RIDGWAY, Proc. Wash. Acad. Sci., 3, Apr. 15, 1901, 151; Birds of No. & Mid. Am., 2, 1902, 224, 228.—SHARPE, H.-L. of Birds, 5, 1909, 509.—WETMORE, Bull. 326, U. S. Dept. Agriculture March 24, 1916, 5, 7, 9, 10, 11, 117; Auk, 33, 1916, 407, 419; 34, 1917, 54, 62.

*Holoquiscalus niger brachypterus* TODD., Ann. Carn. Mus. 10, nos. 1 & 2, 280.

*Description*.—Adult male: similar to *H. n. niger*, but slightly larger; more conspicuously glossed; bill stouter and strongly decurved terminally. Wing, 131.5–137 (133.8) mm.; tail, 114–130 (124.3) mm.; culmen, 31–34 (32.5) mm.

Adult female: similar to the male but smaller. Wing, 108.5–113 (110.8) mm.; tail, 103–108 (105) mm.; culmen, 27.5–29 (28.25) mm. Bill, legs and feet black; iris yellow.

*Type locality*.—North side of Porto Rico.

*Range*.—Islands of Porto Rico, Vieques, and Cubebra, W. I.

*Remarks*.—The Porto Rican Grackle is the last of the Greater Antillean forms; while reaching Cubebra<sup>1</sup> and Vieques<sup>2</sup> it does not extend its range to the other islands of the Virgin Group lying within view a short sail to the eastward; neither are there records for any other form of *Holoquiscalus* until Guadeloupe is reached, thus the gap includes the Virgin Islands (St. Thomas, St. Croix, St. John, Tortola, Virgin Gorda, Anegada and lesser islands and Cays) Sombrero, Saba, St. Eustacius, Anguilla, St. Martin, Barbuda, Antigua, St. Kitts, Nevis, Redonda and Montserrat.

#### ***Holoquiscalus lugubris lugubris* (SWAINSON)**

?[*Gracula*] *barita* LINN. Syst. Nat. ed., 10, 1758, 109.

*Quiscalus lugubris* SWAINSON, Anim. in Menag., 1838, 299.—BURM., Syst. Ueb. 3, 1856, 283.—TAYLOR, Ibis, 6, 1864, 84.—CASSIN, Proc. Acad. Nat. Sci., Phila., 1866, 408.—SCLATER, Cat. Am. Birds, 1862, 141; Ibis, 1884, 162; Cat. Birds Br. Mus., 11, 1886, 402.—CHAPMAN, Bull. Am. Mus. N. H., 6, 1894, 37.—PHELPS, Auk, 14, 1897, 364.—BERLEPSCH & HARTERT, Nov. Zool., 9, 1902, 33.—HELLMAYR, Nov. Zool. 13, 1906, 21.—BERLEPSCH, Nov. Zool., 15, 1908, 124.

*Q[uisicalus] lugubris* BONAPARTE, Consp. Av., 1, 1850, 424, 38.—PENARD & PENARD, De Vog. v. Guyana, 2, 1910, 380.

[*Quiscalus*] *lugubris* SCLATER & SALVIN, Nom. Av. Neot., 1873, 38.—GRAY, H.-L., 2, 1870, 38, no. 6526.

<sup>1</sup> Wetmore, Auk 33: 1910, 419.

<sup>2</sup> Ibid., 34: 1917, 62.

*Chalcophanes lugubris* FINSCH, P. Z. S., 1870, 577.

*Ch[alcophanes] lugubris* CABANIS, Mus. Hein., 1, 1851, 197.

*Holoquiscalus lugubris* RIDGWAY, Proc. Wash. Acad. Sci., 3, Apr. 15, 1901, 151; Birds No. & Mid. Am. 2, 1902, 225.—SHARPE, H.-L. 1909, 510.—BRABOURNE & CHUBB, The Birds of S. A., 1 (all published), Dec., 1912, 440.—CHERRIE, Bklyn. Inst. Mus. Sci. Bull., 2 (6), 1916, 211.

*Ch[alcophanes] jamaicensis* (not of Daudin) [=♂] CABANIS in Schomburgk's Reise, 3, 1848 (= 1849!) 683.

*Ch[alcophanes] minor* [=♀] do.; Mus. Hein., 1851, 197.

*Quiscalus barita* LEOTAUD, Ois Trin., 1860, 268.

*Quiscalus* sp.? TAYLOR, Ibis, 6, 1864, 84 (Br. Guiana).

*Description*.—Adult male: In general form and coloration resembling the adult males of *H. j. jamaicensis* but much smaller with more slender and decurved bill. Above and below glossy violet black becoming bluish on the greater and median series of wing coverts; secondaries, retrices and exposed margins of primaries strongly glossed with bronze-green. Wing, 112.5–122 (117.25) mm.; tail, 106–115 (110) mm.; culmen (from base of forehead), 29–30 (29.5) mm.

Adult female: Above dark smokey brown becoming sooty on the rump and upper tail coverts; quills blackish brown faintly glossed with greenish. Below light smoky-brown becoming blackish on the flanks and undertail coverts and shading into grayish brown on the throat. Bill, legs and feet black; iris pale yellow. (Berl. & Hart. Nov. Zool. 9, 1902, 33.)

*Type locality*.—"Brazil", Swainson. British Guiana substituted as type locality in place of Brazil by Berlepsch and Hartert, Nov. Zool., 9, 1902, 33, foot-note.

*Range*.—Trinidad & Tobago, French, British & Dutch Guiana, Venezuela.

*Remarks*.—It is possible though by no means certain that this is *Gracula barita* of the 10th edition of Linnaeus. In this edition Linnaeus first used the name for a bird based on Dr. Rolander, there are no references to any published works or plates, and the description has various discrepancies; the range given is "America," a rather large one but somewhat restricted by the statement that the bird devours bananas. It can be still further restricted when we know that Rolander visited Surinam and St. Eustatius. Rather than resurrect this old name of doubtful application, the use of which by early authors together with *Gracula barita* of the 12th edition has produced much confusion, I prefer to follow all recent authors in the employment of Swainson's name *lugubris*.

The type-locality "Brazil," given by Swainson was doubtless

an error and Berlepsch and Hartert<sup>1</sup> are quite right in substituting British Guiana. Hellmayr<sup>2</sup> in 1906 also substituted British Guiana for Brazil, a proceeding which was rendered unnecessary by reason of its having been done four years before.

***Holoquiscalus lugubris insularis* (RICHMOND)**

*Quiscalus insularis* RICHMOND, Proc. U. S. Nat. Mus., 18, 1895, 675.—

CLARK, Auk, 19, 1902, 265.—LOWE, Ibis, 9th ser., 1, 1907, 570.

*Holoquiscalus insularis* RIDGWAY, Proc. Wash. Acad. Sci., 3, Apr. 15, 1901, 151; Birds No. & Mid. Am., 2, 1902, 225.—CORY, Field Col. Mus., Orn. Ser. 1 (5) 231 (Los Testigos) 248 (Margarita Id.)—SHARPE, H.-L. of Birds 5, 1909, 510.—BRABOURNE & CHUBB, Birds of S. A. 1 Dec. 1912, 440.

*Holoquiscalus luminosus* (not of Lawrence) LOWE, Ibis, 9th ser. 3 1909, 321.

Adult male: Similar to *H. l. lugubris* but larger. Wing, 125 mm.; tail, 120 mm.; culmen (from base of forehead), 32 mm.

Adult female: Similar to adult female of *H. l. lugubris* but larger. Wing, 104 mm.; tail, 88.5 mm.; culmen, 27.25 mm. Feet, legs and bill black; iris pale yellow (Robinson on label).

Type locality.—Margarita Id., Coast of Venezuela.

Range.—Margarita Id., Los Testigos Ids.

Material.—Two specimens, 1 adult ♂, 1 adult ♀.<sup>3</sup>

Remarks.—The Margarita Grackle is an insular race with rather limited distribution. Lowe refers birds from the Testigos to *H. l. luminosus* with the remark that they are identical with Grenada birds, but Cory refers them to *insularis*, stating that they are somewhat intermediate. In all probability birds from the Testigos would be more nearly related to the Margarita form.

***Holoquiscalus lugubris orquillensis* (CORY)**

*Holoquiscalus orquillensis* CORY, Field Col. Mus., Orn. Ser., 1 (5), 227 (diagnosis), 254 (distribution).

*Holoquiscalus insularis* (not of Richmond) LOWE, Ibis, 9th ser., 3, 1909, 321.

Adult male:<sup>4</sup> "Similar to *H. insularis* from Margarita, but differs in having the middle tail feathers almost plain black, not decidedly glossed with green as in that species; rest of the tail feathers showing a slight greenish gloss but much less than in *insularis*. The single female taken

<sup>1</sup> Nov. Zool. 9, 1902, 33. Footnote

<sup>2</sup> Nov. Zool. 13, 1906, 21,

<sup>3</sup> No. 151, 732, coll. U. S. N. M.

<sup>4</sup> Quoted from original description.

apparently does not differ from specimens from Margarita. Wing, 118.3; tail, 105; ex. culmen 26.7."

*Type locality*.—Orquilla (Los Hermanos Ids.), Caribbean Sea.

*Range*.—Orquilla.

*Material*.—No specimens of this race seen by me.

*Remarks*.—Lowe records eight specimens of this race taken on Orquilla during January, 1908, and gives the following measurements. Five males: wing 118 mm. tail 95 mm. exp. culm. 27. mm. Three females: wing 102 mm., tail 83 mm., exp. culm. 23 mm.

***Holoquiscalus lugubris luminosus* (LAWRENCE)**

*Quiscalus luminosus* LAWRENCE, Ann. N. Y. Acad. Sci., 1, July, 1878, 162; Proc. U. S. Nat. Mus. 1, 1879, 270, 278, 487, 9; 1886, 615.—OBER, Camps in the Caribbees, 1880, 247.—SCLATER, Ibis, 1884, 161; Cat. Birds Br. Mus 11, 1886, 225.—CORY, Auk, 3, 1886, 225; Birds of the, W. I., 1889, 111; Cat. of W. I. Birds 1892, 15 —WELLS, Auk. 19 1902 346; H.-B. of Grenada, 1904, 147 (Grenada), 150. (Carriacou), reprinted (posth.) H.-B. of Grenada, 1907, 151, 154, 1916, 230, 233.—MAYNARD, Cat. of Birds of the W. I., Dec. 1903, 19.

[*Quiscalus*] *luminosus* CORY, List of Birds of the W. I., 1885, 14, rev. ed 1886, 14.

*Holoquiscalus luminosus* RIDGWAY, Proc. Wash. Acad. Sci., 3, Apr. 15, 1901, 151; Birds No. & Mid. Am., 2, 1902, 225, 232.—CLARK, Proc. Bost. Soc. N. H., 32 (7), 1905, 284 —SHARPE, H.-L., 5, 1909, 510.

*Quiscalus inflexirostris* (not of Swainson) CORY, Cat. W. I. Birds, 1892, 111, 146, part (Grenada, Grenadines).

*Description*.—Adult male: Similar to *H. l. insularis*, but bill much longer and more slender. Wing, 117–125.5 (121.9) mm.; tail, 109–115 (113) mm.; culmen, 34–36 (35) mm.

Adult female: Similar to the female of *H. l. insularis*, but a trifle paler both above and below; bill much longer and more slender. Wing, 99.5–105.5 (102) mm.; tail, 86.5–91 (88.3) mm.; culmen, 28–31.5 (30.25) mm. Bill, legs and feet black.

*Type locality*.—Grenada, W. I.

*Range*.—Grenada and the Grenadines (Carriacou, Union, Bequia, Petit Martinique, Mustique, Tobago Keys).

*Material*.—Fifty-three specimens, 35 males and 18 females, all in the collection of the Museum of Comparative Zoology.

*Remarks*.—The best character for the identification of this form is the long, much decurved and relatively slender bill.

Young females are much paler below than adult females, the throat practically white; young males resemble the females except for patches of sooty black feathers, particularly on the back and scapulars.

***Holoquiscalus lugubris inflexirostris* (SWAINSON)**

*Quiscalus inflexirostris* SWAINSON, Anim. in Menag, 1838, 300, fig. 52.—CASSIN, Proc. Acad. Nat. Sci. Phila., 13, 1866, 407.—SCLATER, Proc. Zool. Soc. Lond., 1874, 175, part (St. Lucia); Ibis, 1884, 160, part (St. Lucia); Cat. Birds Br. Mus., 11, 1886, 401, part (St. Lucia); CORY, Auk, 3, 1886, 224, part (St. Lucia); Birds W. I., 1889, 111 part (St. Lucia); Cat. W. I. Birds, 1892, 15, 111, 146, part (St. Lucia).—RIDGWAY, Proc. U. S. Nat. Mus., 12, 1890, 130.—MAYNARD, Cat. Birds W. I., Dec. 1, 1903, 19, part (St. Lucia).

*[Quiscalus] inflexirostris* BONAPARTE, Consp. Av. 1, 1850, 424.

*[Quiscalus] inflexirostris* GRAY, H.-L., 2, 1870, 38, no. 6525.—SCLATER AND SALVIN, Nom. Av. Neotr., 1873, 38, part (St. Lucia).—CORY, List Birds W. I., 1885, 14 (rev. ed., 1886, 14) part (St. Lucia).

*Holoquiscalus inflexirostris* RIDGWAY, Proc. Wash. Acad. Sci., 3, Apr. 15, 1901, 151; Birds No. & Mid. Am., 2, 1902, 225, 226, 230.—NICOLL, Ibis, 8th ser., 4, 561, 1904.—SHARPE, H.-L., 5, 1909, 510.—CLARK, W. I. Bulletin, 11 (3), 1911, 183.

*Quiscalus lugubris* (not of Swainson) SCLATER, Proc. Zool. Soc. Lond., 1871, 271; Semper, 1872, 650.

*Quiscalus luminosus* (not of Lawrence) ALLEN, Bull. N. O. C., 5, 1880, 166.

Adult male: Similar to *H. l. luminosus* but with the bill shorter and stouter. Wing, 120–127.5 (122.12) mm.; tail, 104–118 (110.62) mm.; culmen, 31–31.5 (31.12) mm.

Adult female: Similar to the adult female of the preceding but larger with shorter and stouter bill. Wing, 111.5 mm.; tail, 101 mm.; culmen, 27.5 mm. Bill, legs and feet black.

*Type locality*.—Described by Swainson in 1838 as "Inhabits —?" Attributed in 1873 by Sclater and Salvin<sup>1</sup> to St. Lucia and Martinique. There can be little doubt that the bird described and bill figured by Swainson is the one in question.

*Range*.—Island of St. Lucia, West Indies.

*Material*.—Five specimens, 4 males and a female.

***Holoquiscalus lugubris guadeloupensis* (LAWRENCE)**

*Quiscalus guadeloupensis* LAWRENCE, Proc. U. S. Nat. Mus., 1, Apr. 22 1879 457.—SCLATER Ibis, 1884, 160; Cat. Birds Br. Mus., 11, 1886, 401.—CORY, Ibis, 5th ser., 4, 1886, 474 (Marie Galante?); Auk, 3, 1886, 226, 8, 1891, 49; Birds W. I., 1889, 113; Cat. W. I. Birds, 1892, 15, 111, 147.—MAYNARD, Cat. W. I. Birds, Dec. 1, 1903, 19.

*[Quiscalus] guadeloupensis* CORY, List W. I. Birds, 1885, 14 (rev. ed., 1886, 14) (Guadeloupe).

*Holoquiscalus guadeloupensis* RIDGWAY, Proc. Wash. Acad. Sci., 3, Apr.

<sup>1</sup> Nom. Av. Neotr. 1873, 38.



15, 1901, 151; Birds No. & Mid. Am., 2, 1902, 225, 226, 232.—SHARPE, H.-L., 5, 1909, 510.—NOBLE, Bull. M. C. Z., 60 (10), Aug., 1916, 383, 384.

*Holoquiscalus martinicensis* RIDGWAY, Proc. Wash. Acad. Sci., 3, Apr. 15, 1901, 151; Birds No. & Mid. Am., 2, 1902, 225, 226, 231.—MAYNARD, App. to Cat. Birds W. I., Dec. 1, 1903, 37.—SHARPE, H.-L., 5, 1909, 510.—NOBLE, Bull. M. C. Z., 60 (10), Aug. 1916, 383 (crit.).

*Quiscalus inflexirostris* (not of Swainson) LAWRENCE Proc. U. S. Nat. Mus., 1, 1879, 355, 487.—SCLATER, Proc. Zool. Soc. Lond., 1874, 175 part (Martinique); Ibis, 1884, 160 part (Martinique); Cat. Birds Br. Mus., 11, 1886, 401, part (Martinique).—CORY, Auk, 3, 1886, 224, part (Martinique); 4, 1887, 96 (Martinique) Separates published Feb. 3, 1887; Birds W. I., 1889, 111, part (Martinique); Cat. W. I. Birds, 1892, 15, 111, 146, part (Martinique) MAYNARD, Cat. Birds W. I., Dec. 1, 1903, part (Martinique).

[*Quiscalus*] *inflexirostris* SCLATER & SALVIN, Nom. Av. Neotr., 1873, 38, part (Martinique).—CORY, List Birds W. I., 1885, 14 (rev. ed., 1886, 14) part (Martinique).

*Quiscalus mexicanus*<sup>2</sup> CASSIN, Proc. Acad. Sci. Phila., 13, Dec., 1866, 403.

*Description*.—Adult male: Similar to *H. l. inflexirostris* but smaller and with a much shorter and stouter bill. Wing, 118.5–125 (120.95) mm.; tail, 101.5–106 (103.5) mm.; culmen from base, 29–31 (29.5) mm.

Adult female: Similar to *H. l. inflexirostris* but smaller and paler, with a shorter and stouter bill. Wing, 102–107.5 (105.3) mm.; tail, 78–92 (84.8) mm.; culmen, from base, 24–27 (25.6) mm.

*Type locality*.—Island of Guadeloupe, West Indies.

*Range*.—Guadeloupe, Martinique, Marie Galante?

*Material*.—Twenty-one specimens, 13 males (8 ad. 5 jiw.), 8 females (some not quite adult).

*Remarks*.—Noble<sup>2</sup> places *Holoquiscalus martinicensis* in the synonymy of this species believing the difference between the two forms to be insufficient to warrant a distinction. In this conclusion I fully concur.

Young birds in the first plumage appear rather darker above and paler below than birds in the corresponding plumage of *luminosus*; this is particularly noticeable on the throat which in *guadeloupensis* is almost pure white.

#### ***Holoquiscalus fortirostris fortirostris* (LAWRENCE)**

*Quiscalus fortirostris* LAWRENCE, Proc. Acad. Nat. Sci. Phila., 1868, 360 428.—SCLATER, Proc. Zool. Soc. Lond., 1874, 175; Ibis, 1878, 334; 1884

<sup>1</sup> cf. Ridgway, Birds No. & Mid. Am. 2, 1902, 231 foot note.

<sup>2</sup> Noble, Resident Birds of Guadeloupe, Bull. M. C. Z. 60 (10) 1916, 483.

161; Cat. Birds Br. Mus., **11**, 1886, 400.—CORY Ibis, 5th ser., **4**, 1886, 472; Auk, **3**, 1886, 223; Birds W. I., 1889, 111; Cat. W. I. Birds, 1892, 15, 111, 134, 146.—FEILDEN, Ibis, 6th Ser., **1**, 1889, 480, 485.—MAYNARD, Cat. Birds W. I., Dec. 1, 1903, 19.—Anon. W. I. Bull. **4**, 1903, 140.—BALLOU, W. I. Bull **12**, 1912, 220.

[*Quiscalus*] *fortirostris* GRAY, H.-L., **2**, 1870, 38, no. 6532.—SCLATER AND SALVIN, Nom. Av. Neotr., 1873, 38.—CORY, List Birds W. I., 1885, 14 (rev. ed., 1886, 14).

*Holoquiscalus fortirostris* RIDGWAY, Proc. Wash. Acad. Sci., **3**, Apr. 15, 1901, 151; Birds No. & Mid. Am., **2**, 1902, 225, 230; NICHOL, Ibis, 8th ser., **4**, 1904, 557.—CLARK, Proc. B. S. N. H. **32** (7), Oct., 1905, 220, 227, 282.—SHARPE, H.-L., **5**, 1909, 510.

*Description*.—Adult male: Similar in general style and pattern of coloration to the males of the *H. lugubris* group but much smaller with a short, stout almost straight bill. Wing, 102–110 (105.8) mm.; tail, 91–107 (99.4) mm.; culmen from base, 26–28 (26.75) mm.

Adult female: Similar to the male but smaller in all measurements, metallic gloss duller and washed with deep sooty brown. Wing, 90.5–94.5 (93.1) mm.; tail, 86–91 (88.5) mm.; culmen, from base, 23–26 (24.25) mm. Bill, legs and feet black; iris “straw-yellow in adult, white in young,” Feilden.

*Type locality*.—Island of Barbadoes, W. I.

*Range*.—Island of Barbadoes, West Indies.

*Material*.—Ten specimens, 6 adult males, 4 adult females, all in the collection of the Museum of Comparative Zoology.

### ***Holoquiscalus fortirostris dispar* (CLARK)**

*Holoquiscalus dispar* CLARK, Proc. Biol. Soc. Wash., **18**, Feb. 21, 1905, 61; Proc. Bost. Soc. N. H., **32** (7), 1905, 284.

*Holoquiscalus inflexirostris* (not of Swainson) RIDGWAY, Birds No. & Mid. Am., **2**, 1902, 230, part (St. Vincent).—SHARPE, H.-L., **5**, 1909, 510, part (St. Vincent).

*Quiscalus inflexirostris* (not of Swainson) CORY, Cat. W. I. Birds, 1892, 111, 146, part (St. Vincent); Birds W. I., 189, 111 part (St. Vincent).

*Quiscalus* ? LAWRENCE, Proc. U. S. Nat. Mus., **1**, 1878, 191 (St. Vincent).

*Description*.—Adult male: Similar to adult male of *H. l. inflexirostris* but slightly smaller; tail longer. Wing, 119.5 mm.; tail, 121.5 mm.; culmen from base, 30.5 mm.

Adult female: Similar to adult female of *H. l. fortirostris* but blacker (less sooty above), browner (more sooty) below. Wing, 93–93.5 (93.25) mm.; tail, 89 mm.; culmen from base, 25 mm.

*Type locality*.—Kingstown, Island of St. Vincent, West Indies.

*Range*.—St. Vincent.

*Material*.—Three specimens, 1 adult male, 2 adult females (including the type). All in the collection of the Museum of Comparative Zoology.

*Remarks.* — The status of this form appears to be somewhat uncertain. The material now before me is too meagre to form a basis for any definite conclusion but it seems to me not wholly improbable that two forms of *Holoquiscalus* occur on St. Vincent. The only male specimen is a fine highly colored adult, scarcely distinguishable from *H. l. inflexirostris*. He is larger than Barbadoes birds with a longer and relatively more slender and more curved bill. The females on the other hand are almost identical with females from Barbadoes, but bear not the slightest resemblance to any female specimen of the *lugubris* type.

***Holoquiscalus rectirostris* (CASSIN)**

*Quiscalus rectirostris* CASSIN, Proc. Acad. Nat. Sci. Phila., 1866, 409.—SCLATER, Cat. Birds Br. Mus., 11, 1886, 400 (in syn. of *Quiscalus fortirostris* witha?).—STONE, Proc. Acad. Nat. Sci. Phila., 1899, 35 (Syn. with *Quiscalus fortirostris*?).

[*Quiscalus*] *rectirostris* GRAY, H.-L., 2, 1870, 38, no. 6531.

*Holoquiscalus rectirostris* RIDGWAY, Proc. Wash. Acad. Sci., 3, Apr. 15, 1901, 151; Birds No. & Mid. Am., 2, 1902, 225, 233.—SHARPE, H.-L., 5, 1909, 510.

Adult male! " ——— Black, entire plumage with a dark purple lustre

<sup>1</sup> Original diagnosis.

very slightly changing to greenish on the wings and tail; bill and feet black

Adult female: Unknown.

Type locality.—Unknown.

Range.—Unknown.

Material.—No specimens seen by me.

*Remarks.*—This species is known only from the type specimen in the Academy of Natural Sciences of Philadelphia and is said to be "quite distinct."<sup>2</sup>

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**GENERAL NOTES**

**American Common Tern Recovered in West Africa.**—A most striking example of the great value of systematic bird banding to ornithological science, has been recently received at the office of the Biological Survey, U. S. Dept. of Agriculture.

<sup>1</sup> cf. Ridgway, Birds No. & Mid. Am. 2, 1902, 233 foot note.

On July 3, 1913, Dr. John C. Phillips, of Wenham, Mass., banded one hundred juvenal Common Terns, *Sterna hirundo*, at Eastern Egg Rock, Muscongus Bay, Me., using American Bird Banding Association bands, numbered from 1201 to 1300, inclusive. Four years later, in August, 1917, a native of the village of Ikibiri, on the Nun branch of the Niger River delta, South Nigeria, West Africa, found one of these birds, number 1258, floating in the river, dead. He removed the band and carried it to the Rev. Oswald N. Garrard, of the Church Missionary Society at Patami, from whom the information was received. The native informed the Rev. Garrard that it was a matter of frequent occurrence at that time of the year to find these birds dead, in the river, although no evidence such as might account for this statement was forthcoming.

The almost cosmopolitan range of *Sterna hirundo* is, of course, a matter of common knowledge, but it has no doubt been generally assumed that it was the European breeding birds that wintered in Africa, while the North American colonies would, for the same reason, be presumably in South America at that season. This assumption is probably more or less correct although definite data of the character provided by number 1258 has been lacking. However, the case in question proves that occasionally, at least, North American birds of this species do make the trans-oceanic flight to Africa.

The date is also of peculiar significance, indicating that because of poor condition or other reason, the bird was a non-breeder or that it had bred early either in Europe or America (?) and had immediately moved back to its winter quarters. There is, of course, no information as to how long the bird had been dead when found, but it is extremely improbable that it had been so for more than a very few days or it would have been discovered and eaten by some carnivorous animal.—FREDERICK C. LINCOLN, *Biological Survey, Washington, D. C.*

**Swans on the Hudson River.**—Four swans, apparently *Olor columbianus* (Ord) were observed February 19, from the window of a south-bound New York Central train. They were swimming in the open water at the end of a culvert which connects the Hudson river with a rather extensive bit of marsh about two miles north of Staatsburg, N. Y. The swans were on the marsh side of the culvert and seemed not to be disturbed by the train which passed within a few yards of them. A few crows were walking about on the ice near the swans and out in the river many ducks were seen.—S. C. BISHOP, *State Museum, Albany, N. Y.*

**King Eider (*Somateria spectabilis*) in Michigan Waters.**—Three King Eiders spent the greater part of the winter in the St. Clair River and contiguous waters greatly to the delight and wonder of observing bird lovers. These handsome birds came down from the arctic about the middle of November and remained throughout December and the month of January. They were under observation much of the time and while

wary and suspicious at first, they eventually became quite tame as they made friends with some domesticated Mallards belonging to Mr. Robert Chambers, keeper of the Canadian Gun Club near the junction of the St. Clair and the Basset. King Eiders were also reported at the bird reserve of Mr. Jack Miner, near Kingsville, Ont., a few miles south of the St. Clair.

Records of the visits of the King Eider in Michigan waters are few and have been usually confined to severe winters; but, as the past winter was of unusually mild temperature, the cause of this welcome visit remains problematical.

Another arctic visitor the past winter was the Snowy Owl (*Nyctea nyctea*), hundreds of which visited southeastern Michigan, many of them being taken for mounting and for the Zoo at Belle Isle, Detroit's beautiful park.—ETTA S. WILSON, *Detroit, Mich.*

**An Earlier Consideration of *Botaurus lentiginosus*.**—With reference to Dr. Oberholser's remarks about this species (*Auk*, Jan., 1921, p. 80), as agreement is always a good thing, it may be mentioned that in 1915 in a list of additions and corrections to our 'Hand-list of British Birds,' it was decided to treat this bird as a distinct species (see 'British Birds,' Vol. IX, p. 6).—H. F. WITHERBY, *London, Eng.*

**Louisiana Clapper Rail in Mississippi.**—Among some skins that Dr. Oberholser very kindly identified for me recently, was a specimen of the Louisiana Clapper Rail (*Rallus longirostris saturatus*). The bird, a female, was shot by me in a salt marsh at Gulfport, Harrison County, Miss., on January 18, 1919, and is in my collection.

Speaking of the range of this species, Dr. Oberholser says, "Although the form *Rallus longirostris saturatus* has been recorded as far east as Alabama, there seems to be no published record for Mississippi."—STEPHEN S. GREGORY, JR., 456 Surf St., Chicago, Ill.

**The Type Locality of *Ortalis v. vetula*—a Correction.**—In 'The Auk' for January, 1921, in a revision of *Ortalis vetula*, we designated the type locality of typical *vetula* as Tampico, Tamaulipas (p. 46). We have since received a letter from Dr. Carl E. Hellmayr, who writes that Wagler's type is in the Munich Museum. He also kindly informs us that the collector, a Mr. Keerl, did not visit the State of Tamaulipas, according to the records of the Museum, but worked in the vicinity of Vera Cruz, and then went up to the City of Mexico. It is, therefore, nearly certain, as Dr. Hellmayr points out, that the type was obtained in the neighborhood of Vera Cruz, and the type locality of *Ortalis v. vetula* should be corrected to "neighborhood of the city of Vera Cruz, Mexico."—W. DEW. MILLER AND LUDLOW GRISCOM, *American Museum of Natural History, New York.*



**Passenger Pigeon in Wisconsin.**—What I believe to be an authentic record of the occurrence of the Passenger Pigeon in Wisconsin in 1905 is given me by Mr. O. L. Wetterhall. In the fall of that year, Mr. Wetterhall, who is an old hunter and who took hundreds of Wild Pigeons in the '70s, was a guest of a farmer near Oconomowoc, and he and his son went out to a large stubble field, where flocks of Mourning Doves were feeding on the loose grain which had been left on the ground.

It was a windy day and the doves were hard to shoot, but about forty were taken, and among them an adult male Passenger Pigeon. Mr. Wetterhall showed this bird to a number of people, who remarked on its being very rare, but did not realize that it was practically extinct. It was picked and cooked with the doves.

Though formerly abundant in the woods along the Des Plaines River, west of Highland Park, Illinois, the last record I know of was a female which I saw at close range in 1894. This bird was in a small oak tree within fifteen feet of the walk on which I was passing, and was so busy preening its feathers, that I stood unnoticed for several minutes watching it, until a passing wagon frightened it away.—HENRY K. COALE, *Highland Park, Illinois*.

**West Africa the True Habitat of *Glaucidium tephronotum*.**—On page 78 of Brabourne and Chubb's 'Birds of South America' (1912) we find listed as No. 723: *Glaucidium tephronotum* Sharpe, Sharpe's Pygmy Owl, "Patr. ign." The species is included in this work because, as we read in the original description,<sup>1</sup> the bird was "said to be from 'South America.' It was presented to the British Museum by Mr. W. Wilson Saunders, F. R. S." A colored figure of this Pygmy Owl appears in the 'Catalogue of the Birds in the British Museum,' II, 1875, Pl. XIII, fig. 2; but up to the present time no further specimens have ever been reported from any part of the New World.

Now among the many remarkable birds discovered by Mr. G. L. Bates in the Southern Cameroon, West Africa, there is one whose validity has not hitherto been questioned, but which certainly merits careful comparison with *Glaucidium tephronotum*. This is *Glaucidium pycrafti*, described by Mr. Bates in 'The Ibis,' 1911, p. 85, and figured in color on Plate VII of the same volume. In studying the four specimens of *Glaucidium pycrafti* collected by Mr. Herbert Lang and myself in the northern Ituri Forest of the Belgian Congo, in 1910, 1913, and 1914, I chanced to compare the two plates above mentioned, and was struck by their very pronounced resemblance. Although the general tone of the crown and back would seem to be decidedly bluer in *tephronotum*, yet I find that our Congo specimens are more nearly like the figure of *tephronotum*, and not one is as brown as that of *pycrafti*.

Even between the descriptions of the two species, the principal diverg-

<sup>1</sup> Ibis, 1875, p. 260.

ences are that *tephronotum* is said to have the upper wing-coverts "rather blacker than the back," while in *pycrafti* they are browner, and that the under wing-coverts, said to be "vinous-chestnut, streaked with brown," in *tephronotum*, "the innermost ones and the axillaries yellowish," are largely whitish, streaked with dusky brown, in *pycrafti*.

If, however, we go back to the original description of *Glaucidium tephronotum* in Latin, we find that these differences are not so real after all: "subalaribus flavicanti-albidis, exterioribus vinascentibus et minute brunneo notatis: tectricibus alarum superioribus alisque dorso concoloribus, tectricibus majoribus primariisque paulo brunnescentibus."

Even in dimensions there is practically no difference between the two type specimens (the wing of *tephronotum* was given as 4.05 inches (= 102.8 mm.), that of *pycrafti*, 105 mm. (Bates); tail of *tephronotum*, 3 inches (= 76.2 mm.), of *pycrafti* 70 mm. (Bates). Our specimens from the Ituri region are slightly larger: wing ♂, 111, 115; ♀, 113, 120; tail ♂, 84, 82; ♀, 82, 87.

There can scarcely be any doubt, I feel, of the identity of the two species in question, *Glaucidium tephronotum* having been erroneously attributed to the South American fauna. This is an exact parallel to the case of *Accipiter castanilius*, described by Bonaparte<sup>2</sup> from a specimen in the Verreaux collection, presumably from South America. Dr. Sharpe believed it to be indigenous to New Granada, and even referred it in the 'Catalogue of Birds in the British Museum' to the Neotropical genus *Micrastur*, notwithstanding the fact that it had since been redescribed from West Africa as *Astur macroscelides*, by Hartlaub.<sup>3</sup> To such an oversight, in these days of specialization any of us is liable.

The range of *Glaucidium tephronotum* may now be stated, in view of the specimens from the Upper Congo: Forests of Lower Guinea from the River Ja, Southern Cameroon, eastward to the Nepoko River, in the Ituri District. Since the type locality 'South America' is erroneous, I designate as the type locality, if, indeed, it does not become so automatically: Bitye, S. Cameroon, where Bates rediscovered the species.—JAMES P. CHAPIN, *American Museum of Natural History, New York*.

**A Kingbird's Unusual Nesting Site.**—While visiting Seaside Park, N. J., during the early part of July, 1919, I found a Kingbird (*Tyrannus tyrannus*) nesting on the top of a street electric light reflector, the light being in use every night. The nest contained three young birds and was placed between and attached to the two insulated wires which supplied current to the light, the bottom of it resting on the top of the reflector.

As far as could be ascertained without disturbing the young, the nest externally was constructed mainly of string and broken pieces of fishing line which were attached to the wires and formed a kind of basket in which

<sup>2</sup> Rev. et Mag. Zool. 1853, p. 598.

<sup>3</sup> Journ. für Orn., 1855, p. 354.

the lining had been placed. It is interesting to note that no other light in the immediate vicinity presented just the same conditions that made the building of this nest possible.

With the exception of some small Norway Poplars and low bushes there are no trees in this section of the country which probably accounts for the choice of such an unusual nesting site.—A. C. GARDNER, *Wilmington, Del.*

**Arkansas Kingbird in Virginia.**—On September 19, 1919, while in company with Dr. B. H. Warren at Wallop's Island, Virginia, we noticed a pair of Arkansas Kingbirds (*Tyrannus verticalis*) associating with a small flock of the common Kingbirds, and Dr. Warren secured one of them. Their actions, while similar to those of the common species, were sufficiently different to attract our attention. So far as I am aware this is the first record for the State.—THOMAS H. JACKSON, *West Chester, Pa.*

**Note on the Name *Gazzola Bonaparte*.**—Walden (*Trans. Zool. Soc. Lond.*, 8, 1872, p74) has clearly shown that *Gazzola Bonaparte* is a synonym or *Graucalus* authors. Unfortunately Walden did not rename Bonaparte's genus and no subsequent author appears to have proposed a substitute, therefore I propose, *Nesocorax* with *Gazzola typica Bonaparte* as the type. The two species will then stand as: *Nesocorax typica* (Bonaparte) and *Nesocorax unicolor* (Rothschild and Hartert).—J. H. RILEY, *Washington, D. C.*

**Magpies and Live Stock.**—The writer was interested in the note in the April number of 'The Auk' (XXXVIII, 1921, p 276) concerning attacks on sheep by Magpies. Some notes on this subject in the writer's possession may be of interest also.

Mr. A. H. Schatz, a former resident in the Black Hills, of South Dakota, related to me some years ago the following facts. John White, a farmer living in the foot hills of the Black Hills, had a cow which was old and weak. In the severe winter of 1914-15 Magpies alighted upon her back and pecked at the rectum until it was deeply gouged out, and it became necessary to shoot the animal. This was the only instance of the kind to occur that winter in that locality, so far as Mr. Schatz knew. In the winter of 1915-16 the Magpies continued this habit on other animals, and it became so widespread that there was general talk of organizing a crusade against these birds. Mr. Schatz was explicit in his statement that most of these attacks were made upon healthy animals.

I have no later reports concerning the habit in these birds of the Black Hills region, but I have on file a newspaper clipping dated from Ainsworth, Nebraska, December 23, 1919, from which the following extracts are taken: "Over on Plum Creek near the Charlie Edwards place, a large number of cattle and horses have been kept every winter because the country is quite well sheltered with trees, and the surface is hilly, thus

affording shelter from the north winds, and as a rule the snow has not been so deep as to entirely cover the grass. This year, however, it has all been covered and there has been little picking for any kind of animals or birds.

"And now the story comes from the section that the Magpies, which are unusually thick this year, are alighting on the backs of the horses and cattle and simply picking away the flesh until a good sized hole has been made, when they tackle the animal in earnest and make a fill of his flesh. The story is that Alva Stine has lost two or three horses, and that George Sindlinger has lost a valuable bull from the Magpie attacks."

Each of the accounts here given contains the evidence that this habit of Magpies to attack healthy cattle (free from sores or wounds) was a novelty in the respective localities.—T. C. STEPHENS, *Sioux City, Iowa*.

**Notes of the Starling.**—The U. S. Department of Agriculture bulletin (No. 868) on the Starling, commented upon in the April 'Auk' alludes to the ability of this bird as a mimic and lists ten native species, the notes of which it has been heard to imitate. The writer, located close to the center of Starling population, can add the names of the following ten native species which he has heard the Starling creditably and in several instances very exactly imitate: Tufted Titmouse, Red Cross-bill, Kingfisher, Crow, Baltimore Oriole, House Wren, Red-shouldered Hawk, Red Headed Woodpecker, Chickadee, White-breasted Nuthatch, and in addition the harsh notes of the Guinea Fowl. On one occasion a single Starling, in a short time was heard to imitate the calls of six different species. The ability to mimic does not appear to be shared equally by all individuals, at least is not equally exercised, and good mimics are rarely met here. During the twenty-one years that this bird has been a local resident I have heard it imitate the calls of other birds on less than fifty occasions, the majority of these falling within the past five years. I do not include the so-called "Wood Peewee" note of the Starling as mimicry. It is so frequently uttered as to suggest that the similarity is a coincidence, though proof of this is only possible by comparison with the notes of the bird in Europe.

The abilities of this bird emphasize the necessity of using the eye as a supplement to the ear in making identifications in the Starling belt.—CHARLES A. UPNER, *Elizabeth, N. J.*

**A Question Concerning the Cowbird.**—Does the female Cowbird take any interest in the fate of the eggs she lays in the nests of other birds?

This question has often occurred to me since an incident I observed in 1915. On June 29 of that year, at Albion, Iowa, I discovered a two-story Red-eyed Vireo nest (*Vireosylva olivacea*). The nest had originally contained one Cowbird egg, but the Vireo had at this time added to the

height of the nest walls and laid a new bottom above this egg. Subsequent to this three Cowbird eggs had been laid and the Vireo was incubating them at the time the nest was discovered.

On the 30th I returned with a camera to photograph this nest, which was in a low oak scrub, and discovered a female Cowbird near the nest. My first idea was, of course, that she was there to lay in the nest. Her subsequent actions were unusual if this was the explanation of her presence. I have several times observed Cowbirds approaching a nest or leaving it after depositing an egg and have always been impressed with the furtive, sneaking actions on such occasions. This bird remained in the tree and was visibly disturbed by our presence. She scolded a little and acted very much like an anxious female alarmed at an intrusion at her nest. On July 1 she was again present when we passed the nest but on my return again to this locality on July 13 I found the eggs broken and the nest deserted. I have often wondered since at the actions of this bird and decided to publish this note in the hope of learning whether any other person has had a similar experience.—IRA N. GABRIELSON, Portland, Oregon.

**The Nonpareil Wintering in Florida.**—On October 28, 1920, I observed two male and three female Nonpareils on the banks of the Miami Canal at the juncture of the Ta-Miami Canal (just outside the city of Miami). On December 13, 1920, I observed two females at the same spot. In the intervening six weeks I made a canoe trip to Fort Myers, Florida, through the Everglades and did not see another Nonpareil.

Ruby-throated Hummingbirds are common around Miami in the winter.—EDGAR BEDELL, Waterford, N. Y.

**The Black-backed Kamchatkan Wagtail, *Motacilla lugens* Kittlitz, in Alaska.**—During the course of the expedition to the Arctic coasts of East Siberia and Northern Alaska in 1913 and 1914, upon which Messrs. Joseph Dixon and W. Sprague Brooks went as zoological collectors, their power schooner, the "Polar Bear", put into the harbor at Attic Island, the outermost of the Aleutian chain, in early May, 1913. From the deck of the vessel here several black and white Wagtails, recognized as *Motacilla lugens* Kittlitz, were seen flitting about the beaches, and on May 4, one adult male was secured.

This specimen, now No. 21590 collection of John E. Thayer, is the first, we believe to be recorded from North America. It was not listed by Brooks in his account of the birds taken on the trip. (Bull. Mus. Comp. Zool., 1915, LIX, No. 5.)

Hartert in 'Die Vögel der paläarktischen Fauna,' treats *Motacilla lugens* as a subspecies of *M. alba*, but the Kamchatkan bird differs so strikingly from its next door neighbor, *M. ocularis* Swinh, that we prefer to give it specific rank.—JOHN E. THAYER AND OUTRAM BANGS, Cambridge, Mass.



**The Mockingbird of St. Thomas, West Indies.**—Mr. Ridgway recorded *Mimus gilvus* from St. Thomas in the 'Proceedings of the U. S. Nat. Museum,' Vol. 7, 1884, p. 172. This record was based on one specimen, part of a small collection of birds made by Messrs. Benedict and Nye from January 17–24, 1884, during a trip of the U. S. Fish Commission Steamer "Albatross." In 1889 Mr. Charles B. Cory in his 'Birds of the West Indies,' (p. 35) says of *Mimus gilvus*: "Common in St. Vincent, Grenada, Santa Lucia, and St. Thomas." Subsequently Martinique and Nevis were added to its range in the Lesser Antilles. The commonness of the species on the islands of the Lesser Antilles mentioned above seems well attested by the synonymy given by Mr. Ridgway in his 'Birds of North and Middle America,' Part IV, p. 235, but I am unable to find any but the reference given above for the capture of a specimen on St. Thomas, so that the statement that it is common on that island would certainly seem to require confirmation.

In August and September, 1916, Mr. Rollo H. Beck collected on St. Thomas for Mr. Frederick F. Brewster and Dr. L. C. Sanford. The land birds obtained have been generously presented to the American Museum, and in identifying and distributing them I came across a series of Mockingbirds, including 3 young of the year, which are most certainly *Mimus polyglottos orpheus* (L.). St. Thomas is part of the Greater Antilles as far as its avifauna is concerned, so that a race of *polyglottos* is the logical Mockingbird to occur on the island.

The probability of *M. gilvus* occurring there also is in my opinion remote. Mr. Ridgway has called attention to the fact that it is not certain whether the Lesser Antillean *gilvus* is the typical Guiana form or not, but if it is it would be reasonable to suppose that it was introduced, as a distinct form occupies an intermediate island. Even if it should prove to be a distinct form, its occurrence on St. Thomas would not be rendered more probable. So I wrote to Dr. Charles W. Richmond of the National Museum for such information about the specimen of *M. gilvus* from there as he might be able to give me. He has kindly replied in detail. The specimen is correctly identified, but "does not bear an original label, and the data is written in a hand that I recognize as one of Mr. Ridgway's early assistants, so there is a possibility that the bird came over here without a label, or with a lot that came chiefly from St. Thomas, but I cannot find anything to support this suspicion further. If you have to deal with this record in print, I think it would be well to question it as uncertain."—LUDLOW GRISCOM, *American Museum of Natural History, New York City.*

**Coereba bahamensis at Miami, Fla.**—At the bathing beach, Miami, Florida, February 7, 1921, I was trying to locate the author of an unfamiliar warbler-like chipping note in a coconut tree when a *Coereba bahamensis* came into full view for a moment at the base of the palm fronds, before it flew.

My first impression was utter astonishment at encountering in the eastern United States a bird the appearance of which was so unfamiliar to me. A yellow breast, differentiated from white throat and belly, bold white eye-stripe contrasted with black, rather large slightly curved bill, and other characters having been noted, I was able to immediately identify my bird with certainty in a text-book courteously loaned me by the director of the Miami Aquarium. Its identity was further verified a few days later at Nassau, Bahamas, where I found the same species common enough.

At Nassau, one of these birds was observed taking a morning bath, fluttering in the dew on the broad leaves of a low plant. This is likely a common habit, but was none the less interesting to observe for the first time.—J. T. NICHOLS, *New York City*.

**The Sycamore Warbler (*Dendroica dominica albilora*) on the Coast of South Carolina.**—I wish to place on record the capture by myself of a young female in full autumnal plumage of this form on the morning of July 13, 1916, near Mount Pleasant. Long before I left home for a swamp (where I collect), a storm was prevailing which increased to hurricane violence before sunset. This bird was carefully examined after being shot and there was the faintest trace of yellow in the supercilary stripe. I, however, waited until I could collect another female of corresponding age to establish the identity to a certainty and found that I had taken the western form of *dominica*. Of the very large series of *D. dominica dominica* that Mr. Brewster collected near Charleston in 1883, '84 and '85, not a single individual showed any tendency towards *albilora*, if my memory serves me correctly, he and I having remarked upon it when the birds were collected.

Mr. Leverett Mills Loomis found the Sycamore Warbler to be a regular fall migrant at Chester, S. C., and noted it as breeding in Pickens County, S. C.

The migration of this subspecies is truly remarkable for the specimen taken by me on July 13, 1916, is the first one I have ever seen since I began to collect birds in 1883.—ARTHUR T. WAYNE, *Mount Pleasant, South Carolina*.

**The Orange-crowned Warbler in Indiana.**—On the eighth of May, 1921, I took a female Orange-crowned Warbler, *Vermivora celata*, at Dune Park, Porter County, Indiana. This little bird was industriously exploring the terminal clumps of a thicket of low willows in true Kinglet fashion and I came near passing it by as such until attracted by its very yellowish appearance. Captures of the Orange-crowned Warbler in the east Central States are infrequent and I wonder if this fact is not due in part to the bird being overlooked and not entirely to its extreme rarity.—CHRESWELL J. HUNT, *Chicago, Illinois*.

**The Hooded Warbler in Delaware.**—On May 3, 1921, while out making observations on the spring migrations of our warblers I was pleased to record the appearance of a male Hooded Warbler (*Wilsonia citrina*). This was in the morning. In the afternoon I observed two males of this species. The birds were not at all shy and permitted observation at close quarters so there could be no mistake as to identification.

So far as I know this species has never been recorded in any lists of the birds of this State. We may, therefore, add this warbler to the avifauna of Delaware as a transient migrant.—A. C. GARDNER, *Wilmington, Del.*

**The Tufted Titmouse (*Parus bicolor*) in Erie County, N. Y.**—This species has always been regarded as a rare straggler in the western counties of New York, and I am consequently pleased to be able to record definitely its capture near Hamburg on April 3, 1921. Mr. James Savage, of Buffalo, and myself were entering a rather extensive hardwood swamp just south of Hamburg, when we heard the peculiar "peto, peto, peto, peto" call. The bird was soon located near the top of a rather large tree, and was readily identified as a Tufted Titmouse by its plain colors and crest.

It kept well to the tops of the taller trees, and moved gradually eastward through the woods. Its monotonous notes, with occasional pleasing variations, were heard almost constantly. The specimen was taken by Savage, and proved to be a fine male. The bird will be mounted for the collection of the Buffalo Society of Natural Sciences.

Although both Mr. Savage and myself were familiar with the species neither of us had ever met with it in any of the western counties of New York. The locality of the capture lies in the old lake plain, about five miles from the southern shore of Lake Erie, the region being drained by the Eighteen Mile Creek and its tributaries.—THOMAS L. BOURNE, *Hamburg, N. Y.*

**The Willow Thrush in the District of Columbia.**—Early on the morning of September 2, 1920, just inside one of the entrance gates of the National Zoological Park at Washington, D. C., I picked up a thrush, still in *rigor mortis*. The bird was recognized as an unusual one for this region and so was taken to the National Museum, where it was identified as the Willow Thrush (*Hylocichla fuscescens salicicola*). The specimen, a male, is now number 256,940 of the National Museum collection. This is the first record for the subspecies in the District of Columbia.—N. HOLISTER, *Washington, D. C.*

**Notes on Alabama Birds. *Larus argentatus*. HERRING GULL.**—While in the Eastern part of Elmore County on Tallapoosa River, on April 21, I noticed a young woman, a daughter of a planter, with a large Herring Gull, apparently two or three years, judging from its plumage, in her arms. On making inquiry I learned that it was captured on April 16, at her home nearby, after a considerable wind storm of that day.

The bird's wing was not broken, but injured, and it made no effort to fly. It was quite vicious when handled, but was in no apparent pain, from the injuries to its wing. This Gull has been reported several times in the interior of the State, and a large female in full plumage, is in the collection of the Alabama State Department of Archives and History, which was shot at Lock 12, Chilton County.

**Elanoides forficatus.** SWALLOW-TAILED KITE.—The Alabama State Department of Archives and History has just added to its collection, a handsome specimen of the Swallow-tailed Kite, in full plumage and coloring. It was shot January 26, 1921, at Hartford in Geneva County, in the southern part of this State. The bird was killed by mistake as a hawk, and forwarded to the Conservation Commissioner, who in turn presented it to the Department. It has been mounted, and is on display in the Museum. This is the only bird of this species reported in the State, in a number of years, and has proven a very interesting contribution.

**Astragalinus tritis tritis.** GOLDFINCH.—For several years I have made records of the Goldfinch in the city of Montgomery. In 1918, the migration through the city took place from the 17th to the 24th of February, and 28 to 34 birds were noted on the grounds of the State Capitol daily. In 1919, they were noted during the last week in February. In 1920, they were noted on April 18, and remained in the city for several days. This year I had failed to note a single one, up to April 27, when two pairs were reported to me within two blocks of the Capitol, but I have made diligent inquiry and no one had observed any in this city up to this date.

The flight north has apparently been made earlier this year, on account of our extreme early Spring, or may be they did not stop in the city, though on 10 or 12 excursions to the country around the city of Montgomery, since the first of January, I have failed to note a single specimen.

**Planesticus migratorius migratorius.** ROBIN.—The annual migration of Robins through the city of Montgomery, took place this year, during the latter part of February, and for ten days thousands were observed on the city streets. Since that time occasional individual have been noted. On Saturday afternoon, April 23, two pairs were called to my attention on South Lawrence Street, in the heart of the residence section, and during that week, the female spent thirty minutes in my back yard, on High Street. I noted three days before a pair in the grounds of the State Capitol.

These records for the Robins are the latest in my possession and a pair was reported to me as nesting in the city, though I have not seen the nest.  
—PETER A. BRANNON, *Montgomery, Ala.*

**Some Birds Observed at Pine Mountain Kentucky.**—I spent the week of April 28 to May 4, 1921, on the western slope of Pine Mountain, Harlan Co., Ky., in the region made familiar by the writings of John Fox,

Jr. As ornithologists have rarely visited the mountains of eastern Kentucky there is but little on record regarding the bird life, practically the only paper being that of Mr. A. H. Howell ('Auk,' 1910, p. 295). Mr. Howell's observations were made on Black Mountain to the east, on the Virginia line, and at other points to the west of the ground I covered. Pine Mountain is a long ridge running parallel to Black Mountain and separated from it by a valley through which runs the Poor Fork of the Cumberland. It forms an absolute watershed with no break north of Cumberland Gap. The streams arising on its western slope flow north or south along a narrow valley at its base until they break through the lower mountains to the west. Pine Mountain rises to an elevation of 2750 feet, being 500 feet above the valley. Both valleys are Carolinian in their fauna, such birds as the Cardinal, Chat, Louisiana Water-Thrush, Worm-eating Warbler, Carolina Wren, Carolina Chickadee, Tufted Tit and Greatcatcher being common in the western one and many of the same with the addition of the Rough-winged Swallow and Summer Tanager about Dillon on the Poor Fork, although my observations at this point were but casual.

Birds not mentioned by Mr. Howell which I found near Pine Mountain Post Office on the western side of the mountain are: Great Horned Owl, Turkey Vulture, Pileated Woodpecker, Whip-poor-will, Blue Jay, Towhee, Scarlet Tanager and Cedar Waxwing, and among the migrants which were passing through at the time of my visit the White-throated Sparrow, Myrtle, and Chestnut-sided Warblers and Tree Swallow. Quite likely the last two were summer residents in the neighborhood. Other species which I took to be transient migrants were the Redstart, Blackburnian and Black-throated Green Warbler, all of which were found as summer residents on Black Mountain by Mr. Howell.

A few pairs of English Sparrows are established near Pine Mountain P. O., and I found a single pair of Song Sparrows and a few Grackles (*Quiscalus g. aeneus*?) at the Settlement School though both species seem to be rare in the district. Phoebees were especially common among the wild mountain ridges where they seemed out of place, and also Hooded Warblers, Ovenbirds, and White eyed Vireos, and it was interesting to find the Osprey so far inland, along the Poor Fork of the Cumberland.

My friend Mr. Herman Behr, who was with me, and had visited the region earlier in the year, adds the following species not listed by Mr. Howell; Barred Owl, Red-tailed Hawk, Ruffed Grouse, Wild Turkey and Spotted Sandpiper.—WITMER STONE, *Academy of Natural Sciences, Philadelphia*.

**Records of Interest from Meriden, Connecticut.**—I submit below a few notes on the rarer species of birds for this vicinity; from records that I have carefully kept and assembled during the past twenty years.

***Colymbus auritus*.** HORNED GREBE.—Fall migrant, August 25, 1916 to November 18, (1913) on inland ponds. February 1, 1914, speci-



men taken alive by ice-cutters after it had flown into a channel of open water; apparently exhausted by long flight. Kept and fed in tub of water for three days it would not fly away, and was found dead on the fourth morning. It is now mounted in Peabody Museum collection, Yale College.

**Podilymbus podiceps.** PIED-BILLED GREBE.—Common fall migrant, breeding on local ponds in the summers of 1908 and 1920.

**Erismatura jamaicensis.** RUDDY DUCK.—August 10, 1919, female watched at close range and with eight-power glasses on Mt. Higby Reservoir. The bird was molting and the still water was flecked with bits of down as it preened itself. It was entirely indifferent to my presence not over eighty feet distant, November 7, 1920. Male on same lake would not take wing, and was possibly wounded.

**Florida caerules.** LITTLE BLUE HERON.—August 13, 1920, adult and one white immature, at Mt. Higby Reservoir.

**Limosa haemastica.** HUDSONIAN GODWIT.—May 15, 1914, not taken, but seen at good range with eight-power glasses and easily distinguished from either *L. fedoa*, or the Willet.

**Catoptrophorus semipalmatus.** WILLET.—July 24, 1904, and September 23, 1913. Also on October 15, 1915, at Broad Swamp, Cheshire.

**Oxyechus vociferus.** KILLDEER.—Rapidly increasing since 1914. Spring migration, April 5 to May 1. Fall records to November 22. Breeding records, June 3, 1914, on plowed land; June 9, 1914, at Broad Swamp; May 24, 1915, with four chicks not over 48 hours old in pasture land.

**Perdix perdix.** EUROPEAN OR HUNGARIAN GREY PARTRIDGE.—Thoroughly acclimated and breeding, eggs 12 to 24, nest usually in hay meadows or borders of pasture land.

**Bonasa umbellus umbellus.** RUFFED GROUSE.—Unusual nesting record, May 17, 1914, twenty-three eggs, nest at base of chestnut stump. Every egg hatched June 1 to 7. Judged by the late Wells W. Cooke to be the production of two hens.

**Falco peregrinus anatum.** DUCK HAWK.—Breeding on Meriden trap-rock cliffs (Hanging Hills,) summer of 1919 and 1920. Its most common prey is domestic pigeons, and in 1919 forty-four young Mallard Ducks were taken from a nearby park lake.

**Aluco pratincola.** BARN OWL.—Only one record, July 2, 1907, found in deep ravine, and watched for fully five minutes.

**Cryptoglaux acadica acadica.** SAW-WHET OWL.—Taken November 10, 1913, rose from ground and was mistaken for a Woodcock.

**Melanerpes erthocephalus.** RED-HEADED WOODPECKER.—Only late record, March 29, 1915, two seen. They remained in woodland and by May 25 had nested. Raised a brood and were seen until mid-summer.

**Astragalinus tristis tristis.** GOLDFINCH.—Late nesting record,

September 22, 1915, four eggs, nest in young apple tree September 27, hatched out two young.

**Vermivora lawrence.** LAWRENCE'S WARBLER.—(Hybrid) May, 1901, and May 22, 1920, perfect marking; seen at close range with eight-power glasses.

**Vermivora leucobronchialis.** BREWSTER'S WARBLER.—(Hybrid) May 11, 1902, and May 9, 1915. June 12, 1915. Male with female.

**Vermivora pinus.** BLUE-WINGED WARBLER.—Nest containing three eggs, in low bush, eight inches from the ground in the town of Westfield. Hybrid male much alarmed and close by when female was flushed.

**Dendroica tigrina.** CAPE MAY WARBLER.—May 19, 1912, May 12, 1914, May 26 and 29, 1917, and May 16, 1920.

**Thyrothorus ludovicianus ludovicianus.** CAROLINA WREN.—December 25, 1903, and January 13, 1907.

**Penthestes hudsonicus littoralis.** ACADIAN CHICKADEE.—October 31, 1913, one on Mt. Beseck, November 1, 1914, four in swamp land, and November 16, 1916, one in town of Berlin, Conn.—LESTER W. SMITH, 60 Cottage St., Meriden, Conn.

**Some Unusual Bird-Records for Northern Vermont.**—Wells River is situated in the Connecticut Valley seventy miles south of the Canadian border at an elevation of 435 feet. The Connecticut River is here joined by two streams; the Ammonoosuc from the east, having its source on the slopes of Mt. Washington, and Wells River from the west. The following records are taken from those of ten years' observation in this vicinity.

**Colymbus holboellii.** HOLBELL'S GREBE.—An individual spent the winter of 1919-1920 in this vicinity.

**Anas platyrhynchos.** MALLARD. A pair were seen October 30 and November 20, 1919.

**Merula americana.** REDHEAD.—An individual seen September 10, 1919, and again April 28, 1920. This bird frequented a half-mile stretch of river until May 8.

**Clangula clangula americana.** GOLDEN-EYE. A flock of six spent the winter of 1919-1920 on a half mile of open water between the villages of Wells River and Woodsville.

**Clangula islandica.** BARROW'S GOLDEN-EYE.—Four spent the winter of 1919-1920 in company with *C. c. americana*.

**Porzana carolina.** SORA.—One seen July 30, 1911. Several specimens have been caught by cats.

**Falco S. sparverius.** SPARROW HAWK.—A pair seen March 28-April 6, 1913.

**Picoides articus.** ARCTIC THREE-TOED WOODPECKER.—One seen September 14, 1914, and frequently during that fall and winter. During the summer of 1912 a new dam was built on the Wells River flooding about two acres of woods containing quite an amount of pine. These quickly died and were not removed until February, 1915. It was here

that the bird seemed to find everything to his liking. He disappeared at the removal of the trees and I have not seen him since. The last record is February 15, 1915.

**Melanerpes erthrocephalus.**—RED-HEADED WOODPECKER.—A pair have spent several seasons here nesting in a maple grove.

**Empidonax virescens.**—ACADIAN FLYCATCHER.—One seen August 15, 1920.

**Pipilo e. erythrophthalmus.** TOWHEE.—Two pairs nested here in 1916, 1919 and 1920.

**Anthus rubescens.** PIPIT.—A flock of four seen October 11, 1920.

**Mimus polyglottos polyglottos.** MOCKINGBIRD.—A pair spent the summer of 1916 here, arriving June 1.

**Toxostoma rufum.** BROWN THRASHER.—From one to three pairs nest every season.

**Penthestes hudsonicus littoralis.** ACADIAN CHICKADEE.—An individual spent the winter of 1912–1913 in company with *P. a. atricapillus* visiting a feeding table frequently.

**Regulus s. satrapa.** GOLDEN-CROWNED KINGLET.—A pair nested here in 1920.

**Hylocichla mustelina.** WOOD THRUSH.—One or two pairs nest in this vicinity every year.—WENDELL P. SMITH, Wells River, Vt.

**Mutants.**—In October, 1915, the writer shot a male English Sparrow (*Passer domesticus*) at the G. O. S. Ranch (north of Fierro), New Mexico, which was notable for having yellow lores and long yellow superciliary lines, being otherwise normal.

A male House Finch (*Carpodacus mexicanus frontalis*) was studied by the writer from May 4 to June 30, 1917, in Denver. This bird was normally colored except that its forehead, crown, and anterior occiput were gray, of a shade exactly matching that to be found on the head of a Hepburn's Rosy Finch, and in having a black circumocular area. It is fairly common, in Colorado, to find this subspecies with the males showing yellow rump and head, in place of reddish.

During the week just passed (May 8 to 15, 1921) a White-crowned Sparrow (*Zonotrichia leucophrys leucophrys*) has visited Cheeseman Park (Denver, Colo.), and was under observation repeatedly during that week. This individual was normal in coloration and color pattern in every way except that its median crown stripe was orange instead of white. Had there been no white superciliary line, this bird might have been taken very easily on hasty examination for a Golden-crowned Sparrow (*Zonotrichia coronata*).

Under whatever name one may choose to designate such departures from the normal, they are most interesting because of their possible bearing on the question of "mutation," and its relation to species formation. Perhaps a more extensive recording of such occurrences might furnish valuable hints concerning the origin of plumage color-pattern—W. H. BERGTOLD, 1159 Race St., Denver, Colo.

**The Criterion for the Trinomial.**—Objections may well be raised to many of the late proposals of Oberholser that closely allied species be reduced to sub-specific rank. A case in point is brought up, and disposed of with vigorous show of finality, in 'The Auk' for January, 1921 (pp. 80-82). The two Cranes, the Little Brown and the Sandhill, *Grus canadensis* and *G. mexicana*, are thrown together as subspecies of one species on the ground that "the writer [Oberholser] has examined and measured a large number of these birds, and the results obtained show that while typical specimens, and in fact the majority, are readily assignable to one form or the other, the measurements . . . completely inosculate . . ." "Therefore," says Oberholser, "specific distinction cannot be maintained."

Granted the criterion, for the employment of the trinomial, of intergradation through individual variation: What *were* the figures assembled? And, furthermore, what relation did the extremes bear to age and sex as well as to geography? In this case of the cranes, where size is the chief or only character, were the "intergrades" simply small first-year birds, or were they really comparable adult individual variants?

In this connection I would call attention to some actual measurements which have been given, by Swarth ('Condor XXI, 1919, pp. 212-213) and by Mailliard ('Condor', XXIII, 1921, pp. 30-31). There was a distinct hiatus between the largest *canadensis* examined by these men and the smallest *mexicana*. Hence, as the latter author rightly insists, they should still be considered distinct species—until proper evidence, is brought forward to the contrary. This, I contend, has not been done, even now.

A question arises as to whether an obvious "sport", a runt, say, in *mexicana* because size is the special character in the present case, should be counted as a valid intergrade. Such specimens fall outside of the polygon of normal variation in the species and, despite the claims of some mutationists, it is questionable if such aberrancies figure at all in the process of species-evolution in the wild. In other words they may have no phylogenetic significance whatever. It is important, then, that any collection of specimens representing two or more near-related forms, should be looked at critically, from various angles, before drawing conclusions. The results of hasty scanning may be wrong.

Particularly grievous are the cases involving Old World and New World forms, closely similar to be sure, but almost or quite universally, up till now, handled as binomials. I sincerely hope that the A. O. U. Committee on nomenclature will subject each one of these cases to searching inquiry, on the basis of specimens determined to be fully adult, sex as well as age being considered also. The criterion for the trinomial must *not* be closeness in general appearance, but it must be *intergradation*, either by way of geographic blending, or by way of individual variation (if this form of intergradation be insisted upon), *determined strictly as such*. If intergradation through the characters of subadults or of juvenals were generally

adopted as the subspecific criterion, what a lot of changes we would be in for. Think of the opportunities among the Empidonacæ, and the gulls!

Oberholser (*loco citato*, p. 79) implies that because a form is clearly a "geographic race," this consideration alone is a reason for employment of the trinomial. Is it necessary for him to be reminded that according to widely held current belief the great majority, if not all, of the lesser differentiated species, among the higher vertebrate animals, are but the results of geographic variation and isolation? There may be species of hybrid origin, but if so, they are relatively rare. Geography, the evolution of habitats through time, has been the *sine qua non* of vertebrate speciation: Very many good species are "merely" geographic variants.

The subspecies concept will fall, just as some few people devoutly hope it will (and we will get back to pure binomials for every form recognizable at all), if it fails to be used on a consistently definite basis. Of course there is no real phylogenetic difference between a species and a subspecies. Degree of difference is a subjective matter; and the only criterion left is that of intergradation, *actually known to exist*.—J. GRINNELL, *Museum of Vertebrate Zoology, Berkeley, California*.

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## RECENT LITERATURE

**Beebe's 'A Monograph of the Pheasants.'**—In November, 1918, appeared the first volume of Mr. William Beebe's 'Monograph of the Pheasants' which was reviewed in 'The Auk' for January, 1919. Now after a lapse of two and a half years the second volume is before us and we are informed by the New York Zoological Society, under whose auspices the work is being published, that they expect to deliver the two remaining volumes during 1922. Considering the complications in printing and publishing that we have had to face, during the past few years, the progress of this work has been most commendable.

Volume II maintains the same high standard that was set by its pre-

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<sup>1</sup> A Monograph of the Pheasants. By William Beebe, Curator of Birds of the New York Zoological Park; Fellow of the New York Zoological Society and Director of the Tropical Research Station in British Guiana; Fellow of the American Ornithologists Union and of the New York Academy of Sciences; Member of the British Ornithologists Union; Corresponding Member of the Zoological Society of London, etc. In Four Volumes Volume II. Published under the auspices of the New York Zoological Society by H. F. and G. Witherby. 326 High Holborn, London, England. 1921. Royal Quarto. (12 × 16 in.) pp. i-xv + 1-269, 24 colored plates, 24 photogravures and 5 maps. Edition limited to 600 copies: price of each volume \$62.50.



decessor except, perhaps, in the quality of the color plates. The first volume was characterized by such a wealth of artistic talent, both artists and engravers, that a comparison is inevitable. In it Thorborn contributed six paintings, Lodge eight, and Knight one while of the present series Lodge furnishes nineteen and Knight two, and we miss the exquisite work of Thorborn entirely. It is in the matter of reproduction, however, that the greatest difference is to be seen, the plates, on egg-shell paper, apparently done in England, are, we think, equally good in each series, but in Volume I there were a number on smooth surface paper by Frisch of Berlin, which are unsurpassed for beauty and delicacy, while Volume II contains only one of these. We fully realize however the impossibility of having reproductions done in Berlin under present conditions, and criticism of the reproduction of the present plates would not be fair, as they are, when all has been said, exceedingly beautiful.

The two plates by C. R. Knight are hardly up to the standard and the one of the Bornean Fire-Back especially demonstrates that oil paintings are unsatisfactory as a basis for illustrations of this kind.

Gronvöld's pictures of young birds are admirable and the photogravures are exceedingly delicate in execution, while the landscapes are beautiful examples of photography.

The plan of this volume follows closely that of its predecessor, but we notice some additional subject headings as for instance, "Daily Round of Life," under which the life history of certain species is given in greater detail. The species considered in Volume II fall into three groups (1) the Kaleege Pheasants, (*Gennaesus*), (2) the Fire-backs and their allies (*Acomus*, *Lophura* and *Lobiophasis*) and (3) the Junglefowl (*Gallus*).

The first group is of interest on account of the great number of species that have been described. Of these Mr. Beebe recognizes only nine, regarding the other twenty-six, of which by the way no less than nineteen were described by Oates, as hybrids. These apparently all come from a narrow strip in Burma where the range of *G. lineatus* joins that of *horsfieldi* and *nycthemerus*. Many of these forms are based upon one or two individuals and in other cases no two of the specimens that have been secured are exactly alike, both of which facts tend to corroborate Mr. Beebe's views as to their status. The problem is one of great interest, however, and well worthy of the careful consideration that he gives it. Others who have studied the group may not agree as to the full specific rank of all the forms which he recognizes and may perhaps concede a place to some that he has suppressed, but the facts of the case are clearly set forth whatever the systematic value of the forms may be, and some of the hybrids are figured. These pheasants range across Asia from China to the western Himalayas in Kashmir, the silver white species on the east and the darker colored ones to the west with a distinct form in Hainan and quite aberrant ones in Formosa and in Indo-China.

The Fire-backs are found in Sumatra, Borneo and the Malay region,

Borneo having one representative of each of the three genera, with *Lophophanes*, the remarkable White-tailed Wattled Pheasant, restricted to it. While not presenting the problem of hybridism offered by the Kaleegee, the Fire-backs are interesting for other reasons. In *Acomus*, for example, the sexes are remarkably similar, while in the allied *Lophura*, they are entirely different, a very peculiar condition in two genera so closely allied.

The Junglefowl naturally attract the attention of the general reader more than any other group of Pheasants from the fact that they include the Red Jungle Fowl, the ancestor of our domestic chicken. Mr. Beebe recognizes four species of these birds (1) the Red Junglefowl (*Gallus gallus*) of India, Siam, the Malay region and Sumatra, (2) the Ceylon Junglefowl (*G. lafayetti*) from Ceylon; (3) the Javan Junglefowl (*G. varius*) from Java and the islands just east of it and (4) the Gray Junglefowl (*G. sonnerati*) from central and southern India.

While Mr. Beebe has fully described the habits and habitats of the wild pheasants he has had in the case of the Red Junglefowl an opportunity to follow out the long and interesting association of a bird with mankind of which he has taken full advantage. He finds that this bird is referred to as domesticated in China as early as 1400 B. C. and was known at an early date in Persia, but is not mentioned in the old Testament. It spread, as a domestic species, westward through Asia Minor and Europe, and eventually throughout the world except in the arctic regions. In many of the Pacific Islands and the Philippines, after having been introduced as a domestic bird, it again became wild, which gave rise to claims of the existence of distinct native species in such localities. Man's interest in rearing domestic fowls has been threefold; (1) for their flesh and eggs, (2) for cock-fighting, (3) for the production of beautiful or abnormal strains, for exhibition purposes.

Under the first heading, many forms of large stature with an abundance of meat have been evolved as well as others in which the egg laying capacity has been increased from the normal set of 4 to 8 eggs to no less than 196 a year, which is a recorded average number for 600 hens in one American poultry yard. Along with this tremendous egg laying power, however, these birds have lost all instinct to incubate and will no longer hatch their own eggs. Game chickens require comparatively no "breeding" as the wild Junglefowl was an adept fighter and this race of fowl has thus ever remained closest to the wild strain.

Among the results of artificial breeding are the long-tailed Japanese fowls, the tail feathers of which have reached the extraordinary length of twenty feet, two inches. This development is said to be due to a suppression of the molt, the feathers growing continuously, but this is difficult to understand in view of our present knowledge of feather growth and development, and a little more detailed information on the matter would have been welcome.

Another development of the "chicken fancier" is the curious Seabright race in which the cock is exactly like the hen.

The nomenclature of domestic chickens seems to be sadly confused as we learn that the so-called Cochín China fowls originated in Shanghai, and the Bramas in America.

The other species of wild Junglefowl have not figured extensively in domestication but Mr. Beebe's account of the hybridising of the Javan species is interesting and amusing. The wild cock when crossed with a domestic hen produces a bird with a remarkable penetrating and raucous voice which can be heard for a mile or more. These birds are highly prized by the natives and are matched against one another not as fighters, but as vocalists, and prove quite as satisfactory subjects upon which to wager money as do the game cocks. They are kept singly in wicker baskets hung high above the houses on tall bamboo poles where they crow continually, and keep in good voice.

Mr. Beebe's book is replete with interesting information while the pen pictures of the homes of the wild pheasants and his experiences in trailing them, are written in his familiar graphic style and we are taken successively to the higher slopes of the Himalayas, to the dense Malay jungles and to the islands of the tropical seas, wherever these beautiful birds exist. We heartily congratulate him and his publishers upon the successful progress that they are making with this notable work. It seems proper too, in this connection to recall the fact, that may not be known to all of our readers, that for the first volume of the 'Pheasants' Mr. Beebe was awarded the Daniel Giraud Elliot medal by the National Academy of Sciences.—W. S.

**Mathews' and Iredale's 'A Manual of the Birds of Australia.'**—With his monumental work 'The Birds of Australia' well on the way to completion, Mr. Mathews has begun, in conjunction with Mr. Tom Iredale, what we presume will be his last word on the subject—'A Manual of the Birds of Australia.' This work, in four volumes, small quarto, will consist of a condensed presentation of the matter contained in the larger work, with such alterations or emendations as the authors deem desirable. It will thus bear the same relation to 'The Birds of Australia' as Gould's 'Handbook' does to his large folio.

The plan of the work judged by Volume I is admirable. The higher groups are well diagnosed while under each genus and species is a synonymy of original references, with accurate dates, the working out of which has formed such an important part of Mr. Mathews' researches. Under the species there are also references to the plates and a brief statement of distribution.

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<sup>1</sup> A Manual of the Birds of Australia by Gregory M. Mathews, F. R. S. E., M. R. A. O. U., and Tom Iredale, Members of the British Ornithologists Union and Corresponding Fellows of the American Ornithologists Union. Illustrated with Coloured and Monochrome Plates by Lillian Medland. Volume I. Orders Casuarii to Columbæ. H. F. & G. Witherby, 326 High Holborn, London. 1921. pp. 1-279. pl. 1-X, and I-XXXVI. Crown 4, Price £ 3.35. per vol.

The main text is divided under the following headings: Description of plumage of adult, immature and chick; description of nest, and eggs; date of breeding season, time of incubation, and a discussion of distribution and forms. In the last category the subspecies are considered with extreme brevity, the typical race being mentioned by name with geographic range only, and the others contrasted with it, as "a darker race," "lighter and larger," etc. We have usually no means of ascertaining whether the description in the main text is based upon the typical subspecies or not. From the method of comparing the several races as described above, it would appear that it is, but when the "typical" form is not found in Australia it is hardly conceivable that the extra-limital bird is the one described. It is unfortunate that the authors are not more definite upon this point and the inclusion of the subspecific names in the synonymy on exactly the same basis as pure synonyms is another mistake. Subspecies must either be ignored entirely or adequately recognized; any half-way method only leads to confusion and misunderstanding. Another unfortunate point is the use of such a hackneyed word as "immature" in connection with plumage. With such definite discussions of plumage-stages as those of Dwight, Witherby and others, easily available, the authors might reasonably have been expected to tell us whether it is the "juvenal", "first winter" or some other "immature" plumage that they are describing.

These criticisms are however technical and as a rule do not affect the general usefulness of this important work, which, from its greater accessibility will probably be our standard reference book on Australian ornithology for some time to come.

The plates are numerous and admirable. Those in color represent mainly "chicks" (= natal plumage) of various species while the others illustrate structural characters of the various genera and are from wash drawings instead of outlines as is usually the case.

The only criticism to be made of the plates is in their numbering, there being two series, so that Plate 10, Vol. I, may refer to either of two entirely different illustrations. Furthermore, there is no reference to any of the plates in the text to which they refer, and one may labor with the brief descriptions of the races of the Silver Gull without having any idea that at the end of the volume there is an excellent plate showing the differences in their wing markings.

Seven new subspecies are proposed in the text where they would readily be overlooked were it not for a list given in the preface.

One feature of this work, which will only appeal to experts on nomenclature is the admirable detail and accuracy of the synonymy, which will of necessity be consulted, especially as regards the genera, by ornithologists who have little or no interest in the avifauna of Australia.

We wish the authors all speed with the remaining volumes, although we realize that this work must of necessity follow along after the larger one, so that Volume V can hardly be expected until the latter is finished  
—W. S.

**Mathews 'The Birds of Australia.'**<sup>1</sup>—The last part of Mr. Mathews' large work continues the treatment of the flycatchers, covering the genera *Machaerorhynchus*, *Seisura*, *Piezorhynchus*, *Monarcha*, etc. We notice but one new form, *Seisura inquieta rogersi* (p. 68) from Derby.—W. S.

**Dr. Patch's 'Bird Stories'**<sup>2</sup>—These stories intended for bird students, "Junior Audubon Classes and other boys and girls who are friendly to birds," forms another of the series being published by the Atlantic Monthly Press, under the title of 'Little Gateways to Science.' The twelve stories treat of the life histories of the Chickadee Herring Gull, Spotted Sandpiper, Loon Cliff Swallow Bald Eagle, Crow, Snowy Heron, Nighthawk, Passenger Pigeon, Screech Owl and Bobolink. The birds are given distinctive names and each becomes as it were, the hero of his particular story, developing a personality that cannot fail to hold the attention of the child.

This form of nature story so much in vogue at present is easily abused and too often fact is lost sight of in the desire to intensify the dramatic qualities. Dr. Patch, however, seems to have been particularly careful in this respect and has succeeded in bringing in an astonishing amount of solid information without detracting from the interest of the story.

The 'Notes' at the end of the volume as well as the bibliography show her thorough knowledge of the literature of the subject.

We cannot have too much attention directed to the conservation of nature if we are to save any remnant of our wild country and wild life for future generations, and such books as this, which aim to instill the principles of conservation in the young children, are especially welcome.—W. S.

**Witherby's 'Handbook of British Birds'**<sup>3</sup>.—The present part, completes the Owls and covers all of the Accipitres but the Osprey and Vultures. It contains much valuable information on plumages especially on the development of the down, and is of particular interest to American ornithologists as so many of the species are closely allied to ours. In this connection it is to be noted that the opinions of several recent writers are followed with regard to the relationship of American and European forms. All of our Gyrfalcons seem to be referred to the Greenland Falcon. *Falco rusticolus candicans* Gm; our Marsh Hawk becomes a subspecies of *Circus cyaneus* and our Goshawk of *Accipiter gentilis*. The genera *Archibuteo*, *Cerchneis* and *Astur* are not recognized.—W. S.

<sup>1</sup> The Birds of Australia. By Gregory M. Mathews. April 15, 1921, pp. 49-96.

<sup>2</sup> By Edith M. Patch. With Illustrations by Robert J. Sim. The Atlantic Monthly Press. Boston (1921).

<sup>3</sup> A Practical Handbook of British Birds, edited by H. F. Witherby, Part X, pp. 81-176. March 1, 1921. Price 4 s. 6 d. per part.



**Miss Cooke's List of Washington Birds.**<sup>1</sup>—The birds of the region about the national capital were first listed by Coues and Prentiss in 1861 when 225 species were recorded. Their revised list of 1883 brought the number up to 248, while Richmond's list of 1902 advanced it to 291. Prof. Cooke, 1908 and 1913, gives 294, two of which were hybrids, and his daughter in the present list brings the number to 299 species and subspecies besides two hybrids and two hypothetical forms.

Her treatment is under three headings (1) Permanent Residents—a mere list with a few comments on comparative rarity. (2) Rare, Irregular or Accidental Visitants—with full dates and authorities for all records, but in most cases no distinction between sight records and specimens secured. (3) Regular Migrants—arranged in a table with earliest, latest and average dates for each. The Northern Robin is mentioned in a footnote as a migrant but does not appear in any of the tables.

This carefully prepared list will be of great value to the Washington ornithologists and to those of other regions who are interested in the comparison of migration dates.—W. S.

**Riley on New Genera.**<sup>2</sup>—Mr. Riley in studying a collection of birds from Celebes finds that several species from that island do not seem to belong to any of the current genera and therefore proposes the following new genera for their reception: *Compsoenas* (p. 51) for *Columba radiata* Q. & G., *Lamprura* (p. 51) for *C. rufigaster* Q. & G., *Diopezus* (p. 52) for *Phlegoenas tristigmata* Bp.; *Cranobrontes* (p. 52) for *Buceros leucocephalus* Vieill. and *Orodytes* (p. 52) for *Arachnothera celebensis* Meyer and Wiglesw.

In another paper<sup>3</sup> Mr. Riley describe four additional new Celebes birds from the collection made by Mr. H. C. Raven. These are *Scolopax celebensis* (p. 55); *Dendrobiastes hyperythra jugosae* (p. 56), *Myzomela chloroptera juga* (p. 56) and *Lamprocorax montosa* (p. 57).—W. S.

**Chapin on New Birds from the Belgian Congo.**<sup>4</sup>—The four interesting birds described in the present paper were all secured on the American Museum's Congo Expedition. *Astur toussenellii canescens* (p. 1), *Batisituriensis* (p. 5) and *Terpsiphone batesi* (p. 6) are from the Ituri District, while *Colius nigricollis leucophthalmus* (p. 2) is from the Nele District.—W. S.

<sup>1</sup> Birds of the Washington Region. By May Thatcher Cooke. Proc. Biol. Soc. Washington, Vol. 34, pp. 1-22. March 31, 1921.

<sup>2</sup> Five New Genera of Birds. By J. H. Riley. Proc. Biol. Soc. Washington, Vol. 34, pp. 51-53. March 31, 1921.

<sup>3</sup> Four New Birds from Celebras. Proc. Biol. Soc. Wash. 34, pp. 55-58. March 31, 1921.

<sup>4</sup> Descriptions of Four New Birds from the Belgian Congo. By James P. Chapin. American Museum Novitates, No. 7, April 4, 1921, pp. 1-9.

**Mabbott, on the Food Habits of Seven Shoal-Water Ducks<sup>1</sup>.—**

In 1918 Mr. W. L. McAtee published (Bull. 720 U. S. Dept of Agriculture) an account of the food habits of the Mallard and Black Ducks and the late Mr. Mabbott in the present paper has covered the other river ducks—the Gadwall, Baldpate, Teal, Pintail and Wood Duck. The Shoveller seems to have been omitted although the European Widgeon, a mere straggler in America, has been included.

These reports are published as a result of the recent increase in duck farming in the United States and the consequent demand for information on the natural food of the several species. The food of these river ducks is found to be from 70 to 98 per cent. vegetable, pond weeds and sedge seeds predominating, while the animal food is mainly confined to certain mollusks and aquatic insects.

The data are compiled mainly from autumn and winter specimens and food habits during the nesting season may be found to differ to some extent. The food of the same species in different localities must vary very considerably and in the case of the Wood Duck the high percentage of cones of the bald cypress consumed would fall off completely in those parts of the country lying north of the range of this tree. In the summary published five-eighths of the specimens examined were from Louisiana which of course accounts for the prominence of this item of food.

Mr. Mabbott had prepared a valuable report and it is fortunate that it was left in such shape that its publication was possible. While all will honor his prompt response to his country's call and the supreme sacrifice that he made, it is a matter of deep regret that such a promising young ornithologist must needs be cut down at the very beginning of his career.—W. S.

**Shufeldt on Pictures of the Passenger Pigeon.<sup>2</sup>—**This paper, read at the 1920 meeting of the American Ornithologists' Union, gives an interesting summary of the various illustrations of the Passenger Pigeon known to the author with some history of the works in which they appear. It forms a valuable contribution to the history of this famous bird, covering, as it does, ground that has been almost entirely neglected. Discussion at the meeting, when it was presented, demonstrated how very few persons there are still living who can accurately describe the appearance and actions of this species, or can judge authoritatively of the relative merits of its portraits. Dr. Shufeldt has added greatly to the value of his paper by furnishing photographic reproductions of twelve of the best published

<sup>1</sup> Food Habits of Seven Species of American Shoal-water Ducks. By Douglas C. Mabbott, Assistant in Economic Ornithology. Bull. 862, U. S. Dept. Agriculture. December 30, 1920. pp. 1-67. Price 25 cts. (Order from Supt. of Documents, Gov. Printing Office, Washington, D. C.)

<sup>2</sup> Published Figures and Plates of the Extinct Passenger Pigeon. By Dr. R. W. Shufeldt. Scientific Monthly. May, 1921, pp. 457-480.

plates of the bird together with several of the last individual, taken from life, and after it had been mounted by the late Nelson R. Wood. Incidentally he states that the plates of Wilson's 'Ornithology' were engraved by Warnicke but we are at a loss to know what authority he has for the statement. If the great majority of them are not the work of Lawson it is high time that proof of the fact were presented.—W. S.

**Lincoln's Instructions for Bird Banding.**<sup>1</sup>—This is a clear and concise series of instructions on how to band birds, how to catch them for banding and study, and how to keep the necessary records. So many important problems can be solved by thus tagging birds, and keeping records of their recapture at the same place or elsewhere, that the Biological Survey has adopted the practise as one of its regular lines of research and volunteers are solicited to aid in the banding. The present pamphlet is issued especially to furnish the necessary instructions for carrying on the work. It seems to admirably fill the requirements.—W. S.

**Murphy on the Sea Coast and Islands of Peru, IV and V.**<sup>2</sup>—Dr. Murphy continues in the 'Brooklyn Museum Quarterly' his interesting account of his recent trip to the Peruvian coast. One installment deals with the Chinch Islands and the Guano industry and is prefaced with an account of a visit there fifty years ago by Dr. Frederick A. Lucas, which was written at Dr. Murphy's request to contrast conditions at that time with those of today. The other installment relates to the ancient mummies of the coast region and to Independencia Bay where the Chilean Flamingo was found.—W. S.

**Speck on Bird-Lore of the Northern Indians.**<sup>3</sup>—This is a delightfully written account of the fables and beliefs of the Penobscot Indians which relate to the wild birds. The Great Auk we learn was regarded as the chief of a tribe which is visited by the chief deity of the Penobscots when his uncle desires to secure a wife. The Petrel's name in the Penobscot language means "picking up grease," referring to the bird's habit of skimming the surface of the water. The Owls, to the primitive Indian mind, were of deep portent and almost all the species are distinguished by name.

The Redstart is "little fire," and the Thrushes, "birds of evening,"

<sup>1</sup> Instructions for Bird Banding. By Frederick C. Lincoln. U. S. Dept. Agr. Department Circular 170. April 1921. pp. 1-18. Price 5 cents (from Supt. Documents, Government Printing Office).

<sup>2</sup> Brooklyn Museum Quarterly January, 1921, pp. 1-28 and April, 1921, pp. 35-55.

<sup>3</sup> Bird-Lore of the Northern Indians. By Frank G. Speck. Reprint from Volume VII, Public Lectures by University of Pennsylvania Faculty, 1919-20. Philadelphia, Pa. Published by the University, 1921.

while others are named in imitation of their calls as in the case of the Whip-poor-will, which to the Penobscots seems to say "wipolessu." The part that birds play in folk-lore is always interesting and Dr. Speck's paper covers an important branch of this subject.—W. S.

**Year Book of the Rhinebeck Bird Club.**<sup>1</sup>—Besides the general reports of the Club there are articles on the Barn Owl by G. W. Gray; the Evening Grosbeak by Dorothy Cookingham; the Barred Owl by Clinton G. Abbott, and a preliminary list of the birds of Dutchess Co., N. Y., by Maunsell S. Crosby. The White Swans originally liberated at Rhinebeck some years ago have bred wild and now number 26 individuals.—W. S.

**Wetmore on the Ducks of the Bear River Marshes, Utah.**<sup>1</sup>—While engaged in studying the duck sickness which has recently become prevalent in Utah, and upon which he has already reported, Dr. Wetmore gathered much information on the life history and favorite foods of the ducks of this region which has been embodied in the present bulletin for the benefit of sportsmen and others interested in water-fowl.

One of the most interesting portions of the report is that dealing with the "eclipse" plumage which was studied in life by Dr. Wetmore. The Drakes of all the resident species except the Ruddy Duck, desert the female, in almost every case, as soon as incubation begins, gathering together in large flocks. Early in summer they molt their bright plumage and assume the dull "eclipse" dress and lose their flight feathers. They then take to the thick marsh growth where they remain in concealment until they are again able to fly. The new normal plumage coming in in September. The females are naturally later in molting than the males and are not in full feather again until late October. The male Canada Goose accompanies the young, as does the Ruddy Duck, and, nesting early, they are able to start the molt by the end of May. It is completed about the time the young goslings are able to fly and the flocks are in evidence again, on the bay, by early July. The Geese are exceedingly wary when hiding during their flightless stage and are rarely seen.

The report contains much valuable data on food plants, and on the enemies and conditions affecting water-fowl.

The importance of the region as a resort of the birds during the molt is emphasized.—W. S.

<sup>1</sup> Year Book of the Rhinebeck Bird Club for the years 1918, 1919, 1920. Published by the Rhinebeck Bird Club, Rhinebeck, N. Y. 1921 pp. 1-40, numerous plates.

<sup>1</sup> Wild Ducks and Duck Foods of the Bear River Marshes, Utah. Bull. 932 U. S. Dept. Agriculture. pp 1-20. pll. I-III. May 31, 1921. Price 5 cent. (from Supt, Documents Gov't. Printing House).

**Food Habits of the Ring-neck Pheasant.**—A recent Circular<sup>1</sup> of the Colorado Agricultural College contains statements of the crop and stomach contents of 60 Ring-necked Pheasants collected in Colorado. No estimates of the proportions of the various food items are given and it is rather difficult to grasp the import of the data presented. The general conclusions drawn by the persons, Messrs. W. L. Burnett and Asa C. Mayson, making the stomach examinations are that the food of the pheasant is largely vegetable, including much grain, that the birds show no preference for insect food and are very indifferent to grasshoppers, that the birds damage corn, wheat and other field and garden crops, and that their value to agriculture has been overestimated.—W. L. M.

**Recent Reports on Game and Bird Conservation.**—Glancing over the constantly increasing number of publications dealing with bird and game protection, we find a picture in 'California Fish and Game,' for April, of 1531 Blue Jays killed in a Blue Jay hunt by sportsmen at Hollister, Calif., under the impression that these Jays eat the eggs of game birds and should therefore be exterminated. This slaughter seems, as the editor suggests, of doubtful benefit. As we have always maintained the upsetting of nature's balance by extermination of any species is a matter deserving the most careful consideration.

'Bird Notes and News' [England] tells us once more of the shameful way in which action on the plumage importation bill is held up again and again in Parliament.

'The Gull,' the organ of the Audubon Association of the Pacific, continues to publish live notes of interest to bird protectionists on the coast, as does the 'New Jersey Audubon Bulletin' for the state which it covers. From the latter we learn that the State Legislature at its last session placed the Bobolink on the list of protected birds where it was prior to the alteration in the migratory bird treaty regulations.

'Fins, Feathers and Fur' has much of interest to Minnesota conservationists and includes a good article on winter bird life in that State for the season of 1920-21 by Thaddeus Surber.

The April 'Bulletin of the American Game Protective Association' has a report on Ring-necked Pheasant breeding and a report of a delightful speech by Dr. Loye Holmes Miller on music of the woods.

The Illinois State Government publishes a 'Circular' on Arbor and Bird Days which is profusely illustrated and full of valuable hints for school work.—W. S.

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<sup>1</sup>A Study of the Food Habits of the Ring-necked Pheasant in Colorado. W. L. Burnett. Feeding Habits and Food of the Ring-necked Pheasant. By Asa C. Maxon. Circular 31. Colo. Agric. College, Ft. Collins, Colo. February, 1921.



**The Ornithological Journals**

**Bird-Lore.** XXIII, No. 2. March-April, 1921.

Winter Bird Life in Los Angeles. By Harriet W. Myers.

The Bird-House for Purple Martins. By Thos. L. McConnell.—Many good practical suggestions, which show what apparently trivial matters affect the birds.

The migration data and plumage paper deal with the Meadowlarks and Yellow-headed Blackbird.

**Bird-Lore.** XXIII, No. 3. May-June, 1921.

John Burroughs, 1837-1921.—A beautiful tribute by Frank M. Chapman.

Why do Birds Bathe? II. By E. T. Seton.—Comments aroused by the previous article on this subject, containing much valuable information on bird baths.

The Great Horned Owl is the subject of the Educational Leaflet by T. Gilbert Pearson.

**The Condor.** XXIII, No. 2. March-April, 1921.

The Biography of Nip and Tuck. A Study of Instincts in Birds. By Loye Miller.—A delightfully written paper conveying facts of the greatest importance in a humorous narrative form. Among other things the young House Finch develops the call note and song of its species, in spite of the fact that it had never heard either, and had been constantly confronted with the notes of a Canyon Wren. This is in direct contradiction to the alleged results of a similar experience published some years ago by another writer.

Notes on two Characteristic Birds of the San Gabriel Wash. By Robert S. Woods.—Cactus Wren and Costa's Hummingbird.

The Pribilof Sandpiper. By G. Dallas Hanna.—An excellent biography from personal experience.

Notes from Southern Arizona. By H. H. Kimball.

The Sitkan Race of the Dusky Grouse. By H. S. Swarth.—*Dendragapus obscurus sitkensis* (p. 59), Kupreanof Island, south-eastern Alaska.

Further Notes on Birds Observed near Williams, Arizona. By Alexander Wetmore.—Notes on 44 species.

**The Condor.** XXIII, No. 3, May-June, 1921.

Notes on the Nesting of the Yosemite Fox Sparrow, Calliope Hummingbird and Western Wood Pewee at Lake Tahoe, California. By John W. Mailliard.

The Probable Status of the Pacific Coast Skuas. By A. C. Bent.—Identifies all Pacific coast birds provisionally as *C. chilensis* (Bp.) a species new to the United States.

Nesting of the Stephens Fox Sparrow. By Wright M. Pierce.

Weights and Plumage of Ducks in the Rio Grande Valley. By A. Leopold.

A Bird Census at Prescott, Walla Walla County, Washington. By L. R. Dice.

Additional Notes on the Water and Shore Birds of Netart's Bay, Oregon. By Stanley G. Jewett.

New Bird Records for North America. With Notes on the Pribilof Island List. By Joseph Mailliard and G. Dallas Hanua.—*Micropus pacificus* and *Lanius mollis* from the Pribilofs, new to North America.

**The Wilson Bulletin.** XXXIII, No. 1. March, 1921.

Nesting of Bachman's Sparrow. By Albert F. Ganier.

Comparative Periods of Nesting Life of some North American Nidicolae. By Frank L. Burns.

Notes on the Habits of the Breeding Water Birds of Chatham County, Georgia. By W. J. Erichsen.

**Wilson Bulletin.** XXXIII, No. 2. June, 1921.

Migrant Shrike. By I. N. Gabrielson.—A nest study.

Bird Banding in Northern Michigan during the Season of 1920. By Dayton Stoner.

**The Oologist.** XXXVIII, No. 2. February 1, 1921.

Birds of Yakima County, Washington. By J. B. Hurley.

Some Winter Birds of Perry County, Alabama. By Prewitt Roberts.

Rare and Uncommon Birds, Lawrence County, Mo. By Johnson Neff.

**The Oologist.** XXXVIII, No. 3. March 1, 1921.

Nesting of the American Hawk Owl. By E. S. Norman.

**The Ibis.** (11 series) III, No. 2. April, 1921.

Field Notes on the Birds of Macedonia. With special reference to the Struma Plain. By F. N. Chasen.

Velocity of Migratory Flight among Birds. By Col. R. Meinertzhagen.—Considers that birds do not accelerate their speed when migrating. Gives a mass of data on speed of various species.

Field Notes on the Birds of Lower Egypt. By W. Raw.

The Birds of Tasso and Adjoining Islands of the Rokelle River, Sierra Leone. By Willoughby P. Lowe.

A Systematic List of the Birds of Sierra Leone. By David A. Bannerman.

J. F. Miller's Icones. By C. Davies Sherborn and Tom Iredale.

Report of the Sub-committee, consisting of Dr. E. Hartert, Messrs. T. Iredale and W. L. Selater on amendments and proposed alterations to the names in the B. O. U. 'List of British Birds', as accepted by the Committee of the B. O. U. on the British Birds List.

"The Last Phase of the Subspecies," a letter from Messrs. P. R. Lowe and C. Mackworth-Praed in reply to one from L. M. Loomis in the October 'Ibis', is a very interesting contribution to the subspecies question. These gentlemen seem to regard the species and subspecies as two different things, but how they are to be distinguished in actual practice except by the arbitrary establishment of some sort of criterion of intergradation they do not explain. Practice shows that there is as wide a diversity of opinion at the present time on this matter as there has been in the past. As witness

our American Juncos. Again they say very confidently that "by far the majority of our present-day subspecific forms belong to this last category, [i. e., variations directly due to the action of environment] and are mere environmental, unstable and essentially superficial variations, which would quickly disappear if the organism were transferred from its normal environment to some other of a different nature." They evidently are unfamiliar with Professor F. B. Sumner's experiments with mice in California where dark colored forms have bred true ever since they were transferred to a desert environment, where the native race was pale-colored. We have too much evidence of the stability of sub-species to warrant their dismissal in such offhand fashion. Dr. Joseph Grinnell on a previous page of the present Journal sums the matter up concisely when he says "there is no phylogenetic difference between the species and the subspecies."

**Bulletin of the British Ornithologists' Club.** No. CCLVII.

Lord Rothschild and Dr. Hartert describe *Turdus joiceyi* (p. 74) from Ceram; Mr. D. A. Bannerman, *Malimbus rubricollis nigeriae* (p. 77) and *M. r. praedi* (p. 78) from southern Nigeria and northern Angola, and Mr. C. Chubb, *Pseudosicalis* (p. 78) new genus for *Pseudochloris auri-ventris*, and *Notiocorys abariensis* (p. 79) from British Guiana.

**Bulletin of the British Ornithologists' Club.** No. CCLVIII.

Mr. E. C. Stuart Baker describes *Arboricola torqueola millardi* (p. 101) from Koteghur, Himalayas. Dr. Van Someren describes sixteen new African birds from specimens in the Tring Museum.

**Bulletin of the British Ornithologists' Club.** No. CCLIX.

Mr. E. C. Stuart Baker describes *Dicaeum chrysorrhoeum intensum* (p. 108) Sikkim and *D. trigonostigma rubropygium* (p. 108) Mergui. Dr. Percy R. Lowe describes *Thinocorus rumicivorus bolivianus* (p. 109) Bolivia, *T. peruvianus* (p. 109) Peru, *Attagis cheeputi* (p. 109) Patagonia, *Numenius phaeopus alboaxillaris* (p. 110) E. Africa, and *Belonopterus cayennensis molina* (p. 111). Lord Rothschild proposes *Thinocorus rumicivorus venturii* (p. 111) Buenos Aires and Mr. Mackworth-Præd, *Franco-linus hildebrandti lindi* (p. 111), while Dr. Van Someren has fourteen more new African birds.

**Bulletin of the British Ornithologists' Club.** CCLX.

Dr. Van Someren contributes descriptions of nineteen new African birds and the following are described by Dr. Hartert, *Pycnonotus barbatus nigeriae* (p. 126) So. Nigeria; by Mr. D. A. Bannerman *Nigrita canicapilla angolensis* (p. 126) N. Angola and by Lord Rothschild, *Paradisea mixta* (p. 127) locality unknown.

**British Birds.** XIV, No. 10, March 1, 1921.

A Third Season's Observations on a Cuckoo. By Edgar Chance.—A most interesting study. A single Cuckoo laid 21 eggs in a season all in Meadow Pipits' nests. She sat on a limb near a nest and watched it intently for an hour or two, then flew heavily to its side, deposited an egg,

placed it in the nest, removing one of the Pipit's eggs and flew off again. This is a brief statement of the author's conclusions on the manner of depositing the egg.

**British Birds.** XIV, No. 11. April 1, 1921.

Ornithological Notes from Norfolk for 1920. 27th Annual Report. By J. H. Gurney.

Notes for Seasons 1918-19-20, on the Irish Colonies of Sandwich and Roseate Terns. By C. J. Carroll.

**British Birds.** XIV, No. 12. May 2, 1921.

Bird Photography on a City Lake. By G. C. S. Ingram.

"Territory in Bird Life." A review of Mr. Howard's notable book by H. G. Alexander who "already held" the same theory.

**British Birds.** XV, No. 1. June 1, 1921.

Homing Ability in the Nestling Willow Warbler. By J. M. Dewar.—Chicks with eyes closed were experimented with and invariably turned more or less completely around before advancing, so that they only got back to the nest when they were headed in the same direction as they had assumed when sitting in it.

Some Notes on the Rook. By Stanley Crook.—Admirable photographic illustrations.

**Avicultural Magazine.** (III series) XII, No. 2. February, 1921.

The Mallee Fowl of Australia. By T. P. Bellchambers.—Life History. Quail Breeding in Japan. By N. Taka-Tsukasa.—Reared and kept in captivity for their song.

**Avicultural Magazine.** (III series) XII, No. 3. March, 1921.

Some Corsican Birds. By Sydney Porter.

**Avicultural Magazine.** (III series) XII, No. 4. April, 1921.

Longevity in Cage Birds. By A. G. Butler.—A Napoleon Weaver Finch has lived in his aviary for twenty-one years.

**The Emu.** XX, Part 4. April, 1921.

Second Trip to Macpherson Range, South-east Queensland. By S. W. Jackson.

The Nature of the New Zealand Avifauna. By Gregory M. Mathews and Tom Iredale.

A New Menura; Prince Edward's Lyre-Bird. By A. Chrisholm.

The Tubinaria (Petrels and Albatrosses) in the Gould Collection at Philadelphia. By W. B. Alexander.

Birds Visiting Cape York Peninsula and New Guinea. By H. G. Vidgen.

Notes on the Domestic Habits of the Spotted-sided Finch (*Steganopleura guttata*). By Mrs. S. T. W. Norton.

Notes on Birds of Prey from Casterton, Victoria. By C. E. Simson.

**The South Australian Ornithologist.** VI, Part I. January 1, 1921.

Description of a New Wren. By J. W. Mellor.—*Leggeornis lamberti eyrei* (p. 10), Warunda Creek, S. Australia.

Bird Notes from the Lake Frome District of South Australia. By J. N. McGilp.—Additional notes in next issue.

Notes on a Motor Trip from Adelaide to Western Queensland. By F. E. Parsons.

**The South Australian Ornithologist.** VI, Part 2. April 1, 1921.

Notes on Birds met with during a Visit to South-west Queensland. By A. Chenery.

New Scrub Wren. By J. W. Mellor—*Sericornis maculata geraldtonensis* (p. 43). Geraldton Dist., W. Australia.

A New Scrub Wren from Houtman's Abrolhos, Western Australia. By F. R. Zietz. *S. m. houtmanensis* (p. 44).

**L'Oiseau.** II, No. 1. January, 1921. [In French.]

On *Lalage rufiventer*. By P. Carie.—With colored plates of bird and nest.

Experiences in Breeding the Hoopoe. B. G. Cordier [See also No. 3].

**L'Oiseau.** II, No. 2. February, 1921.

Recollections of a Naturalist in French West Africa. On *Cryptorhina atra*. By Dr. Millet-Horsin. [*Turacus buffoni* in No. 3.]

On *Alectoris callolaema* Salv. and Festa.

**Revue Francaise d'Ornithologie.** No. 143. March 7, 1921. [In French.]

Study of a Collection of Birds from Equatorial Africa. By J. Berlioz.

**Revue Francaise d'Ornithologie.** No. 145. May 7, 1921. [In French.]

Contribution to a Study of the Mediterranean Forms of the Peregrine Falcon. By L. Lavanden.

Review of Dr. F. Cathelin's 'Les Migrations des Oiseaux.' Published in Paris, in 1920.

**Le Gerfaut.** X, No. 4, 1920. [In French.]

A Nest of the Black Woodpecker. By M. Mairlot.

Nesting of the Black Kite in Belgium. By A. Galasse.

**Le Gerfaut.** XI, No. 1, 1921. [In French.]

Ornithological Excursion to the Battlefield of Flanders.

**Yearbook of the Netherlands Ornithological Society.** No. II. Af. 1, 1921. [In Dutch and German.]

Ornithological Studies in Gajo-land. By F. C. Van Heurn and Dr. R. C. E. G. J. Baron Snouckaert van Schauburg.—Annotated list of species observed in this part of Sumatra.

The Birds of Homer. By J. S.

Our Knowledge of Certain Sumatran Woodpeckers. By E. Stresemann. [In German.]—*Chrysocolaptes* spp.

The Black-throated Grebe. By van Dedem.

On Quadrinomial Nomenclature and its Application to Ornithology. By A. Laubmann.

**Ornithologische Monatsberichte.** 29, No. 5-6. May-June, 1921. [In German.]

On the Molt of the Primaries in Alcedinidae. By E. Stresemann.—



Describes the irregularity in the order of molt in the Kingfisher, first, we believe, pointed out by the reviewer in 1898.

On the Forms of *Parisoma subcaeruleum*. By O. Graf Zedlitz.—*P. s. ansorgi* (p. 52) from Benguela, Africa, is described as new.

**Journal für Ornithologie.** 69, No. 2. April, 1921. [In German.]

On a Collection of Birds from West Usambara. By H. Grote.—Contains annotations on 133 species, the following being described as new, *Caprimulgus pectoralis guttifer* (p. 125).

On the Ornithology of North-eastern France. By L. Schuster.

On the Long-crested Turacous. By Reichenow.—Recognizes five forms.

Remarks on *Buteo vulpinus* By E. Stresemann.

The Question of Mimicry in Cuckoo's Eggs. By F. von Lucanus.—In the report of the February meeting of the German Ornithological Society Dr. Reichenow describes seven new forms *Arboricola collaris* (p. 263) Kuantung China; *Turtur logonensis* (p. 263) Bekaba, East Cameroon; *T. kafuensis* (p. 264), Namwala, S. Africa; *T. capricola suahelicus* (p. 264), East Africa; *Alseonax murina grotei* (p. 264), East Cameroon; *Apalis niassae* (p. 264), Langenburg, Niassa, and *A. namensis* (p. 264), Bosum, East Cameroon.

One description consists of a line and a half, the only character being "brown of the upper parts paler" than in an allied form. Others are equally careless. No types are mentioned and rarely any indication of the material at hand.

**Aquila.** XXVII. 1920. [In Hungarian and German.]

Consists largely of an account of the life and works of Nicolas Zeyk. By Jacob Schenk, with a publication of some of his manuscripts.

**Bird Notes.** IV, No. 2. February, 1921.

Field Notes from Mashonaland. By Guy Falkner.

Observations on Some Hybrids of the Ploceidae. By A. De Coux.

Numerous admirable articles on aviaries in this and other recent issues.

#### Ornithological Articles in Other Journals

**Baxter, E. V. and L. J. Rintoul.** The Pintail as a Scottish Breeding Species. (*Scottish Naturalist*, March-April, 1921, No. 111-112.)—A full resumé of occurrences.

**Harper, R. M.** Geography of Central Florida. (Thirteenth Annual Report, Florida Geol. Survey, 1921.)—The bird matter is brief and compiled.

**Pohlman, A. G.** Have Birds an Acute Sense of Sound Location? (*Science*, May 6, 1921.)—It would seem that birds have great acuteness in hearing and also a definite ability in determining the direction of the sound source.

**Shufeldt, R. W.** Life History of the Black Skimmer or Scissor-Bill.

(Nature Study Review, April, 1920.)—This number of the Review is full of information on bird study.

**Beck, Rollo H.** Bird Collecting in the Highlands of Santo Domingo. (Natural History, XXI, No. 1, January–February, 1921.)—An extremely interesting article on the interior of the island.

**Blaauw, F. E.** Days with the Birds of Tierra Del Fuego. (Ibid.)—Beautifully illustrated account of the recent visit to southern Paragonia.

**Chapman, F. M.** Courtenay Brandreth's Bird Paintings. (Ibid.)—Reproductions of some of the artist's beautiful paintings and comments thereon. If those who set out to paint birds would read Dr. Chapman's article they would profit materially—or give up the attempt. As he truly says the painter of birds must know and study the bird in life until he is thoroughly familiar with each species—its own special traits, actions, disposition, etc. And yet how often do we see the attempt made with nothing but a badly mounted specimen as a foundation!

**Mershon, W. B.** The Dance of the Sand Hill Crane.—(Michigan Tradesman, April 1, 1921.)—Interesting account of the weird performance of these birds in Kidder Co., N. Dakota, about 1889.

**Bangs, O., and Penard, T. E.** (1) *Lophotriccus* versus *Cometornis*. (Proc. Biol. Soc., Washington, 34, p. 78, March 31, 1921.)—Owing to an earlier overlooked citation of type for the former genus, the changes recently proposed by these authors become unnecessary and *Lophotriccus* and *Calopteryx* remain as previously recognized. (2) A new name for *Pachyrhamphus polychropterus costaricensis* Chubb.—*P. p. tantalus* is proposed. (Ibid. p. 78.)

**Oberholser, Harry C.** *Textor* Temminck versus *Alecto* Lesson. *Hyphantornis* Gray becomes *Textor* Temminck. (Ibid. p. 79.)—An earlier use of *Textor* for another species (*Oriolus cucullatus* Müller) makes these changes apparently necessary.

**Oberholser, Harry C.** *Mutanda* Ornithologica X. (Ibid. pp. 49–50) *Petrophila erythrogastra* (Vig.) becomes *P. rufiventris* (Jard. and Selby); *Iole philippensis* (Gm.) becomes *E. gularis* (Pucheran); *Erythrura tricolor* (Vieill.) becomes *E. forbesi* (Sharpe); *Spermospiza guttata* (Vieill.) becomes *S. pustulata* (Voigt.) and *Estrilda cinerea* (Vieill.) becomes *E. troglodytes* (Licht.); the names as originally proposed being in all cases homonyms.

**Oberholser, H. C.** A Revision of the Races of *Dendroica auduboni*. (Ohio Jour. of Science, XXI No. 7, May, 1921.)—Dr. Oberholser recognizes four races of Audubon's Warbler, dividing *auduboni* of previous writers into two forms, the more eastern of which is described as new *D. a. memorabilis* (p. 243), type from Ward, Colo. *D. a. nigrifrons* Brewster and *D. a. goldmani* Nelson are the other races, the former being restricted to the Huachuca Mts., so far as the United States is concerned, though ranging south in Mexico and the latter found only in Guatemala.

Incidentally Dr. Oberholser refers to the type of *D. auduboni* as "now in the United States National Museum." As a matter of fact it is, as it

always has been in the collection of the Academy of Natural Sciences of Philadelphia as definitely stated, Proc. Acad. Nat. Sci., Phila., 1899, p. 14. The conclusions there arrived at have never been questioned and it seems rather late in the day to set up a claim that the duplicate specimen in Washington is the type and decidedly misleading to make the positive statement that it is so without even a reference to the previous type determination.

**Foster, Nevin H.** Birds' Songs at Hillsborough, Co. Down. (Irish Naturalist, February, 1921.)—Dates of song periods.

**Wait, W. E.** The Owls and Diurnal Birds of Prey. Found in Ceylon. (Spolia Zeylanica, XI, Pls. 43-44, March, 1921, pp. 317-380.)—Detailed descriptions, keys and accounts of habits.

**Wait, W. E.** Occurrence of *Hypolais caligata* in Ceylon. (Ibid, p. 406.)

**Baker, E. C. Stuart.** The Game Birds of India, Burma and Ceylon. (Jour. Bombay Nat. Hist. Soc., XXVII, No. 2.)

**Baker, E. C. Stuart.** Birds of the Indian Empire. (Ibid.)—A Hand List, which is most welcome in view of the proposed "Systema Avium" and the fact that it is twenty-two years since a comprehensive list of Indian birds appeared. The present instalment covers the Corvidae, Paridae, Paradoxornithidae and Turdoididae.

**Donald, C. H.** The Birds of Prey of the Punjab. (Ibid.) (Continued.)

**Whistler, Hugh.** Some Notes on the Genus *Caprimulgus* in the Punjab. (Ibid.)—A valuable paper on the occurrence and habits of the species with critical notes on their characters.

**Chubb, C.** On New Forms of South American Birds. (Ann. and Mag. Nat. Hist., Vol. 7, No. 38, Feb., 1921.)—*Microphila* (p. 192) is proposed as a new genus for *Sporophila castaneiventris* Cab., and *Duncanula* (p. 193) for *S. homochroa* Selater. *D. duncani* (p. 193), *Sporophila longipennis* (p. 193), *S. gutturalis roraimae* (p. 193) and *Pseudochloris roraimae* (p. 194); all from Mt. Roraima, British Guiana, are described as new.

**Chisholm, A. H.** Bowers and Playgrounds. (Queensland Naturalist, January, 1921.)—A plea for more study of the Bower birds.

**Van Someren, V. G. L.** On a Collection of Birds from Turkanaland. (Jour. E. Africa and Uganda Nat. Hist. Soc., No. 16, February, 1921.)—186 species, with list of specimens and critical notes.

**Rendahl, Hjalmar.** A List of the Birds of the Pearl Islands, Bay of Panama. (Arkiv. f. Zoologi, XIII, No. 4, 1920.)—Notes on one hundred species collected by Dr. C. Bovallius in 1882 for the University of Upsala.

**Rochon, Duvigneaud, A.** The Vision and the Eye of Birds. (Bull. Biologique de la France et Belgique, LIV, No. 2, January, 1921.)—An extended discussion of the morphology, physiology, etc., of the birds' eye. [In French].

**Laubmann, A.** Bird Life on the Elbsee at Aitrang in Allgäu. An

Ecological Study. (Archiv f. Naturgeschichte, LXXXV. A, Heft 12, 1919, December, 1920.) [In German].

**Norton, A. H.** Our Stormy Petrels. (The Maine Naturalist, I, No. 1, April 25, 1921.)—An account of the habits of Leach's and Wilson's Petrels, the two occurring off the Maine coast.

**Shufeldt, R. W.** Young Birds and Birds Eggs. (American Forestry, April, 1921.)—Illustrated by many half-tones from photographs.

**Criddle, Norman.** Birds in Relation to Insect Control. (Canadian Field Naturalist, November, 1920)—A valuable and suggestive paper. In connection with the great danger attaching to systematic extermination of almost any species attention is directed to "crow shoots" so popular in recent years and largely fostered by the manufacturers of ammunition. In an agricultural area in which the crows had been nearly wiped out an outbreak of grasshoppers did great damage while in other sections crows gathered in numbers and acted as a distinct check.

**Lloyd, Hoyes.** The Duck Specimens Recorded as Labrador Ducks in Dalhousie College, Halifax, Nova Scotia. (Ibid)—The female of the mounted pair proves to be our American Scoter. There are therefore only 39 specimens known to be in existence, 1 in Canada, 26 in the United States and 12 in Europe.

**Wright, A. H. and S. E. R. Simpson.** The Vertebrates of the Otter Lake Region, Dorset, Ontario. IV. The Birds. (Ibid)—Annotated list of 122 species.

## NOTES AND NEWS

THE DELAY of three months in the appearance of the July 'Auk' is solely due to the printers' strike, which began on May 1 and prevented the resumption of work until about August 1. Work on the October issue will proceed at once and it is hoped that it may appear before the end of that month.

When we consider the reduction in size of many scientific journals and the irregularity of their appearance during the period affected by the war, 'The Auk' feels that its readers may congratulate themselves upon having suffered no inconveniences except the delay in the appearance of this issue.

The financial burden during the past year has been a heavy one but the sale of several sets of the journal, and a most liberal contribution from the National Association of Audubon Societies, together with the generosity of Mr. S. Prentiss Baldwin, who paid for the publishing of the papers on bird banding, and of Miss Mary Wright, who bore the expense of the paper by her late brother, on the Mockingbird in New England, have enabled us to tide over what we feel has been a most critical period.

The main portion of this present issue is printed exactly as it was prepared for the press on June 1, but under 'Notes and News' we have added notes on happenings between that date and September 1.

IN THE PERIOD that has elapsed since the appearance of the April 'Auk', the Union has been severely stricken by the death of three of its Fellows, two of whom were founders and ex-presidents—a greater bereavement than has ever befallen it in any previous year of its history.

DR. J. A. ALLEN, dean of the scientific staff of the American Museum of Natural History, died at Cornwall on Hudson, New York, on August 29, 1921, after a brief illness, aged 83.

To such an extent is the present prosperity of the American Ornithologists' Union and the high standard of its official organ 'The Auk', due to the tireless energy and continued interest of Dr. Allen for almost forty years that he might justly be termed the father of our society. As a founder of the Union, its president for the first seven years of its existence, editor of 'The Auk' for twenty-eight years and of the eight volumes of its predecessor the 'Bulletin' of the Nuttall Ornithological Club, as well as of the three editions of the 'A. O. U. Check-List,' he has been active in every phase of the work of the society. Ever solicitous for the welfare of the organization he unselfishly gave to it the best that was in him. To the American Ornithologists' Union the death of Dr. Allen is a calamity.



We realize to the utmost the loss that we have sustained of a guide and counsellor, and of a kindly, sympathetic colleague in the science to which we are devoted, but in addition the death of Dr. Allen brings forcibly to our attention the passing of the older generation of American ornithologists and the shifting of the burdens of the Union upon new shoulders and ere long those of us who are now active in its affairs will have gained a measure of distinction from having had the privilege of knowing, collaborating with and loving those men to whom American Ornithology owes so much.

Joel Asaph Allen was born in Springfield, Massachusetts, July 19, 1838, the eldest son of Joel and Harriet (Trumbull) Allen, both of early New England stock. His father was a farmer and his early life was spent on the farm under rigid puritanical discipline. He attended the local district school and later spent five years at the Wilbraham Academy. At the age of thirteen he had developed an interest in nature and soon began the accumulation of specimens in such spare moments as he had, his main attention being given to birds.

In 1862 he became a special student under Louis Agassiz and accompanied him on his famous expedition to Brazil in 1865. At about the same time he was placed in charge of the department of mammals and birds in the Museum of Comparative Zoology, and in 1871 was designated assistant in Ornithology, a position which he retained until called to the Curatorship of Birds and Mammals at the American Museum of Natural History, in 1885, where the remainder of his life was spent. For some years he was in charge of all the vertebrates in the latter institution, and temporarily of the invertebrates as well, but he was eventually relieved of all responsibility except the curatorship of Mammals, to the study of which his last years were devoted.

In 1867 Dr. Allen made a collecting trip to the Middle West and in the following year to East Florida, while in 1871-2 he visited the Great Plains and the Rocky Mountains and in 1877 was a member of the U. S. Government expedition to the Yellowstone. His experiences in the then wild countries of the West and South, are set forth in his 'Autobiographical Notes' published by the Museum in 1916, and are replete with interesting description and adventure.

Dr. Allen was not only the editor of the 'Nuttall Bulletin' and 'The Auk', but also of 22 volumes of the 'Bulletin of the American Museum of Natural History' and several of the *Memoirs* of the same institution, and all bear evidence of his exceptional qualifications as an editor. While some of his early papers in the 'American Naturalist', descriptive of his travels in the West were of a popular character, Dr. Allen was distinctly a technical writer and all of his later publications were of a technical character. He never appeared on the lecture platform and a natural diffidence made the delivery of communications before even scientific societies difficult and distasteful.

His writings were voluminous and number upwards of 1450 titles, dealing mainly with birds and mammals, but covering reptiles; evolution, nomenclature and biography as well.

One of his earliest papers on the 'Mammals and Winter Birds of East Florida' won the Humboldt scholarship and has become a classic, setting forth as it does the general principles of the geographic distribution of birds in Eastern North America. His monographs of the North American Rodentia in association with the late Dr. Coues form another notable series of papers, while his report on the Brazilian birds brought back by the H. H. Smith Expedition ranks among the most important contributions to neotropical ornithology. Of his more important later works are his monograph of the Musk Oxen and his Mammals of the Princeton Patagonian Expedition.

Dr. Allen was always deeply interested in the problems of nomenclature and the efforts to stabilize our scientific names and the admirable style and character of our A. O. U. 'Check List' and the system of supplements are to a large extent due to him, while his interest in the general subject won him a place on the International Commission on Zoological Nomenclature.

Dr. Allen was a member of the National Academy of Science and an honorary member of a number of societies both at home and abroad.

A memorial biographical address on Dr. Allen will be delivered at the coming meeting of the A. O. U. by his former assistant and associate, Dr. Frank M. Chapman.—W. S.

CHARLES BARNEY CORY, a founder and seventh president of the American Ornithologists' Union, and Curator of Birds in the Field Museum of Natural History in Chicago, died on July 29, 1921, in the 65th year of his age.

He was born in Boston, Massachusetts, on January 31, 1857, son of Barney and Eliza A. B. Cory and was educated in Boston Schools and the Lawrence Scientific School of Harvard University. He became active in financial and business affairs in Boston, and was a director in many corporations, etc.

Later he removed to Chicago where he became curator of birds in the Field Museum of Natural History, a position which he continued to hold until the time of his death.

Mr. Cory early developed a deep interest in ornithology and formed important collections. He specialized in the birds of the West Indies and published several catalogues of this avifauna as a whole, as well as works on 'The Birds of Haiti and San Domingo' and 'The Birds of the Bahamas.' He also spent much time in Florida when the country was wilder than it is today and a little volume on 'Hunting and Fishing in Florida' describes his experiences and the fauna as he found it at that time. He established a museum at Miami, which was unfortunately

destroyed by fire. In 1894 Mr. Cory's collection was purchased by the Field Museum where he later became curator. Here he prepared a work on the 'Birds of Illinois and Wisconsin' and a new edition of his 'Key to the Birds of Eastern North America,' both intended to aid the beginner in identifying birds and to this end abundantly supplied with text illustrations.

Following the accession of considerable South American material at the museum Mr. Cory became deeply interested in the Neotropical avifauna and began the preparation of a list of the 'Birds of the Americas' supposed to contain all the species of the New World. Only two parts of this most valuable work have appeared, but we understand that Mr. Cory has left much manuscript for the succeeding volumes.

Mr. Cory was interested in other things besides ornithology—music, and various games, notably golf. In everything that he undertook he made every endeavor to excel and all of his publications are marked by sincere effort and painstaking care. His knowledge of the West Indian and South American avifauna was notable and in the course of his studies he described a large number of new species.

Mr. Cory was, before he went to Chicago, a regular attendant at the meetings of the Union and always interested in its prosperity. He was one of the Founders and served as Councillor, Treasurer, Vice President, and President.

A memorial to be presented at the next meeting of the Union will be prepared by his associate, Dr. W. H. Osgood.—W. S.

WILLIAM PALMER, a Fellow of the American Ornithologists' Union, died at Bellevue Hospital, New York, after a brief illness on April 8, 1921. He was born in Penge, a civil parish of London, England, Aug. 1, 1856, and was the son of Joseph Palmer, who later was employed or many years in the department of taxidermy in the U. S. National Museum. He came to America at an early age with his parents and received his education in the public schools. In 1874, when 18 years old, he was appointed to a position in the Museum and after some years became Chief Taxidermist and Zoological Modeler. In 1888 he was elected an Associate of the Union and ten years later a Fellow.

Palmer was a good field naturalist, a keen and careful observer, and probably more intimately acquainted with the local distribution of birds and ferns of the District of Columbia than any other naturalist of the National Capital. His early papers comprised chiefly notes on the occurrence of some of the rarer species about the district. During his connection with the Museum he made several extended field trips among the more important of which were those to the Gulf of St. Lawrence in 1887, to the Pribilof Islands in Bering Sea in 1900, and to Java about ten years ago. The trip in 1887 was made on the U. S. Fish Commission Schooner 'Grampus' for the purpose of collecting specimens and notes on

the various fish-eating birds. During the cruise he visited the Magdalen Islands and Bird Rock in the Gulf of St. Lawrence, Funk Island, and several points in Newfoundland and southern Labrador. A paper on the birds which he observed appeared in the 'Proceedings' of the U.S. National Museum for 1890, pp. 249-265. His most important ornithological publication was probably his report on the 'Avifauna of the Pribilof Islands' issued in 1899 as a chapter in part 3 of the Jordan Commission Report on 'The Fur Seals and Fur Seal Islands of the North Pacific Ocean.' In this report he summarized all the information then available regarding the birds of the islands and incorporated some valuable notes on the development of plumage based on his own observations. Unfortunately he never published any general report on his work in Java.

He was greatly interested in feather development and at the Washington meeting of the Union in 1898 he presented an original and important paper on 'Some Characteristics of Neossoptiles.' Part of his conclusions were included in his Pribilof report but the details of this work were never published in full. He was always loath to publish before he had exhausted his subject and because of the high standard of completeness which he set for himself much of his material never appeared in print and consequently the public has been deprived of the benefit of many of his valuable observations.

In addition to birds he devoted much attention to ferns and was an authority on the ferns of Virginia and the District of Columbia. In recent years he had become much interested in the vertebrate fossils of the miocene beds of the Calvert Cliffs, Maryland, and collected much material representing the whales, dolphins, sharks, and other marine forms found in this deposit. In short, William Palmer was an all round naturalist, a careful and accurate observer, a skillful taxidermist, and possessed an excellent knowledge of the groups in which he was interested. Beside his affiliation with the A. O. U. he was a member of the American Fern Society, serving as president in 1917 and 1918, and was an officer of the Biological Society of Washington, and for several years filled the position of chairman of the Committee on Communications.

In accordance with the custom of the Union, after the death of a Fellow a formal memorial address on his work is presented at the next meeting. This address will be prepared by Dr. Charles W. Richmond and will be published in 'The Auk'.—T. S. P.

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JOHN LEWIS CHILDS, an Associate of the Union from 1900 to 1906, died Mar. 5, 1921, en route from Albany to New York City while returning from California to his home in Floral Park, N. Y. He was born in Jay, Maine, May 13, 1856, and received his education in the public schools of that town. At the age of 18 he began his life work in floriculture at East Hinsdale, Long Island, and a few years later he purchased a tract of land nearby which is now in the village of Floral Park. Within 15 years



from the time he started in business his name became widely known in this country and abroad through his horticultural publication the 'May-flower', which had a circulation of half a million copies, and through his catalogues which were circulated in enormous editions.

Mr. Childs was active in public affairs both local and state. He served as the first president of the village of Floral Park, was a member of the State Senate of New York in 1894 and 1895, and was twice defeated for Congress on the Republican ticket. He served for many years as president of the Board of Control of the State Normal and Training School at Jamaica, 20 years as president of the Board of Education of Floral Park, and at the time of his death was a member of the Advisory Board of the Orphan Asylum Society of Brooklyn, N. Y.

About 1895 he became interested in ornithology and especially oölogy and brought together what was said to be one of the finest private collections of birds' eggs in this country, containing representatives of nearly all the species in the A. O. U. 'Check List'. A catalogue of his collection of birds, nests, and eggs was published in 1906 and a few years later a catalogue of his ornithological library. Mr. Childs contributed a few notes on birds to 'The Auk' during the years 1900 and 1908, but his principal articles appeared in 'The Warbler'. This periodical he published in two series, the first comprising two volumes issued in 1903 and 1904, and the second seven volumes 1905-1913 (vol. VI, 1910, and VII, 1913). It is much to be desired that ultimately his collection of eggs may be acquired by some public museum where its treasures will be generally accessible to oölogists. Biographical sketches of Mr. Childs may be found in 'The Condor', vol. IX, for Sept., 1907, and in 'The Oologist', vol. XXXVIII, for April and August, 1921, the first and last illustrated by portraits.—T. S. P.

SERGIUS NIKOLAEVICH ALPHERAKY, 1850-1918, of Petrograd, Russia, a Corresponding Fellow of the Union since 1913, died in 1918 at the age of 68, but news of his death has only recently reached the United States. Alpheraky was primarily an entomologist and beginning in 1884 published a number of papers on insects chiefly on Lepidoptera. His principal ornithological works are those on the waterfowl of Russia, comprising a monograph on the ducks, 'Utki Rossii', and a companion work on Geese, 'Guai Rossii'. The latter containing descriptions of practically all the Palearctic species appeared in 1904. In the following year it was translated into English by John Marschall of Trinity College, Cambridge, England, under the title of 'The Geese of Europe and Asia' and was illustrated by a frontispiece by Sushkin and 24 colored plates by Frohawk. This important monograph (which was reviewed in 'The Auk' for April 1907, pp. 229-230,) is the work by which its author is chiefly known to English readers. Alpheraky was a corresponding member of the Imperial Academy of Sciences at Petrograd, a member of the Imperial Russian Geographical Society, and an honorary member of the Russian Entomological Society.—T. S. P.



COL. HENRY WEMYSS FEILDEN, a Corresponding Fellow of the Union since 1884, died at his home in Burwash, Sussex, England, on June 18, 1921. He was the second son of Sir William Feilden, second baronet of Ferniscowles, Lancashire, and was born in October, 1838. His early education was received at Cheltenham and Sandhurst and at the age of 19 he began his army career in India. For his service in the Indian Mutiny in 1857-58 he received a medal and clasp and similar recognition for service in China in 1860. In 1862 he joined the Confederate Army with the rank of Asst. Adjutant General and at the close of the war in 1865 he surrendered with the army of Tennessee under Gen. J. E. Johnston. Later he was called to South Africa during the Boer trouble in 1881 and in the summer of 1888 he was stationed in Barbadoes.

While serving in the Confederate Army in 1864 he married the daughter of David MacCord of South Carolina and after the close of the Civil War returned to England to recuperate and enjoy a much needed rest. In 1872 he made a six weeks' trip to the Faroe Islands and in 1875-76 served as naturalist on H. M. S. 'Alert' on the Nares Expedition to the Arctic. During this expedition which left Upernavik, Greenland, in July, 1875, and remained in the north until October of the following year, he was able to obtain much valuable information and to secure among other things the young of the Knot (*Tringa canutus*)<sup>1</sup> and eggs and young of the Sanderling (*Calidris arenaria*). The results of this work appeared in a report in the 'Narrative of the Voyage' of the Alert and also in special papers. His interest in the Arctic aroused by his service on the Alert never abated and subsequently at various times he visited Spitzbergen, Voigach, Russian Lapland, Kolgnev, and Nova Zembla. An account of his trip to Spitzbergen appeared in the 'Zoologist' for 1895 and the details of a trip to Arctic Russia may be found in Henry J. Pearson's 'Beyond Petebora Eastward', 1899.

Col. Feilden was a warm friend of Harvie Brown and between them they brought together a notable collection of birds and eggs most of which unfortunately were lost in the fire which destroyed Harvie Brown's mansion at Dumfries, Scotland, in January, 1897.

Col. Feilden published a number of papers but no complete list of them has yet been issued. After the death of his wife, which occurred in 1914, he became much depressed and was ailing for some time prior to his death. An interesting sketch of his life from which the above facts have been gleaned, appeared in the London 'Field' for July 2, 1921, p. 33.—T. S. P.

FREDERICK HERSCHEL WATERHOUSE, a Corresponding Fellow of the Union since 1889, died in London, England, Mar. 12, 1919. He was

<sup>1</sup> For a note on the later discovery of egg of this species by Lieut. A. W. Greely, see Merriam 'Auk' II p. 312, 1885.

born Oct. 4, 1845, and at the time of his death was in his 74th year. He was best known as Librarian of the Zoological Society of London, a position which he filled from Feb. 1, 1872, until his retirement on Jan. 1, 1913. During this time he brought out the fourth and fifth editions of the 'Catalogue of the Library of the Zoological Society' in 1887 and 1902 and published several other valuable works of reference. Among the most important of these were his 'Dates of the Works of John Gould', 1885, and his 'Index Generum Avium', 1889—the latter a most useful list containing references to the place of publication of about 7000 generic names of birds. This Index has been critically examined by Richmond, who has published from time to time three lists of additional names including those omitted as well as those proposed from 1889 to 1915 and has added a useful list of corrections (Proc. U. S. Nat. Mus., vol. 53, pp. 565-573, 1917), which should be consulted by those who have occasion to look up avian generic names. A companion index of generic names of mammals was projected by Waterhouse and was well under way when upon learning that a similar work was being prepared by the U. S. Dept. of Agriculture he generously consented to the acquisition of his manuscript by the Department and the additional material was incorporated in Palmer's 'Index Generum Mammalium' issued in 1904. In his earlier years Waterhouse was interested in insects and published in the Journal of the Linnaean Society of London (Zool.) for 1878, a paper containing 'Descriptions of New Coleoptera of geographical interest collected by Charles Darwin.' As librarian he was able to contribute in various ways to scientific work and it is much to be desired that others in such positions would utilize their opportunities in making similar contributions. A brief account of his work may be found in 'The Entomologists' Monthly Magazine', vol. LVI, p. 17, 1920.—T. S. P.

DR. VALENTIN LVOVICH BIANCHI of Petrograd, Russia, a corresponding Fellow of the Union since 1916, died on Jan. 10, 1920. He was born in 1857. For a number of years prior to his death he had been connected with the Zoological Staff of the Museum of the Imperial Academy of Sciences at Petrograd, where he was curator of the ornithological department. He was also active in entomology and many of his earlier papers were devoted to this subject. Among others was an 'Enumeration of the Works on Hemiptera-Heteroptera of the Russian Empire' during the century from 1798 to 1897 which appeared in 1898. He published a number of papers on ornithology, one of the earliest of which appeared in 1886 under the title 'Zur Ornithologie der westlichen Ausläufer des Pamir und des Altai' and contained notes on 136 species of birds from the region east of Bokhara. This was followed in 1890 by 'Notes on the Birds observed in the summer of 1894 near Uschaki in the government of Novgorod.' Among his papers containing revisions of groups may be mentioned his review of the palaearctic species of *Carpodacus*, 1897, and *Tetrao gallus*, 1899.

He kept up his activities as far as possible to the end but was unable to publish anything during the last three years of his life. He left a number of valuable ornithological manuscripts which together with his publications are in the possession of his son Leo Bianchi, librarian of the Zoological Museum of the Russian Academy of Sciences, Petrograd.—T. S. P.

The announcement that the Brewster Memorial Medal will be awarded for the first time in 1921 recalls the fact that several medals have been provided in recognition of special work in ornithology. The Daniel Giraud Elliot medal of the National Academy of Sciences has been awarded three times for ornithological work—in 1918 to Frank M. Chapman for his report on the 'Birds of Colombia', in 1919 to C. William Beebe for his 'Monogrape of the Pheasants', and in 1920 to Robert Ridgway for his 'Birds of North and Middle America.' This medal will be awarded again this year and possibly also the Salvin Godman Medal of the B. O. U. which has not thus far been awarded.

DR. ALEXANDER WETMORE, of the Biological Survey, returned in May after an absence of twelve months from a successful trip to Argentina, Paraguay, Uruguay, and Chile. One of the main objects of his trip was to secure data on the occurrence of North American migrants in the southern part of South America.

R. N. DAVIS, Director of the Everhart Museum in Scranton, Pa. has recently returned from a successful trip to Panama where he secured an interesting series of specimens representing many species of birds.

H. S. SWARTH, with his assistant W. D. Strong, has recently resumed field work in British Columbia begun two years ago. The work this year will be done in the Skeena River district and will continue five months.

PROF. WILLIAM ALANSON BRYAN, formerly connected with the Bishop Museum in Honolulu, has been appointed Director of the Los Angeles Museum of History, Arts and Sciences.

ARETAS A. SAUNDERS has spent the summer studying the bird-life of the Alleghany (N. Y.) State Park, in Cattaraugus Co., N. Y., close to the Pennsylvania line. The study was made under the direction of Dr. C. C. Adams of the Roosevelt Wild Life Forest Experiment Station, N. Y. State College of Forestry.

DR. CLARA BARRUS, literary executor and authoritative biographer of the late John Burroughs, asks that all persons owning interesting letters

from Mr. Burroughs will communicate with her at Woodchuck Lodge, Roxbury, N. Y. All letters sent will be promptly copied, or extracted from, and returned to the owners.

DR. ANTON REICHENOW, for many years curator of birds in the Berlin Museum, has retired and has been succeeded by Dr. Erwin Stresemann.

THE POLISH NATIONAL MUSEUM OF NATURAL HISTORY has been formed by a union of the Branicki Zoological Museum and the Zoological Museum of the University of Warsaw. The keeper of the ornithological section, T. Chrostowski, whose address is Kraskowskie-Przedmiescie 26-28, Warsaw, is particularly interested in Neotropical ornithology and is author of a paper on the types of Neotropical birds in the Zoological Museum at Petrograd.

NEWS has recently been received from Petrograd that Prof. Sergius A Buturlin is reported to be living in Alaty, near Kazan in Eastern Russia, and Prof. Michael A. Menzbier is still in Moscow.

PREPARATIONS for the Ten Years' Index of 'The Auk' for 1911 to 1920 are now under way. The committee was organized at a meeting held on May 20 and the work distributed among the members. The plan of this Index will be the same as that of the last and it is hoped to have the work well advanced before the next annual meeting of the Union.

A NEW JOURNAL, 'The Maine Naturalist', appeared on April 25, 1921, with the sub-title of 'Journal of the Knox Academy of Arts and Sciences,' at Thomaston, Maine. Norman W Lermond is the Managing Editor and with Arthur H. Norton and Alfred O. Gross in charge of the department of Ornithology, bird notes are assured a prominent place and Maine ornithologists will once more have a medium for the publication of local records. The first issue is a very creditable one. It will appear as a semi-annual in April and October.

OWING to an oversight the date of the annual stated meeting of the American Ornithologists' Union was wrongly given in the April 'Auk'. The meeting will convene for its business session at the Academy of Natural Sciences in Philadelphia on Monday, November 7, followed by the general meeting for the presentation of papers on November 8, 9, and 10. On Friday, November 11, a visit will be paid to the gardens of the Zoological Society, where the bird collection is particularly fine, and on Saturday a trip is planned to an attractive camp in the New Jersey pine barrens. We would again urge all members to plan to be present on this occasion and to send to the Secretary as soon as possible the titles

of their papers, so that a program may be prepared in advance. This has long been a desideratum and can only be accomplished by the co-operation of the speakers. Any additional information desired will be furnished by addressing the local committee at the Academy of Natural Sciences, Logan Circle, Philadelphia.